Optical Multi-test Platform

AP1000 Series

Mainframes

Connect up to 8 plug-in modules, automatically recognized after insertion, or the extension mainframe for 12 optical modules.

Includes:
- 5.7" Touchscreen
- Remote Control
- Multiple I/O's
- 19" rack compatible
- Interconnectivity between mainframes

AP33xx Series

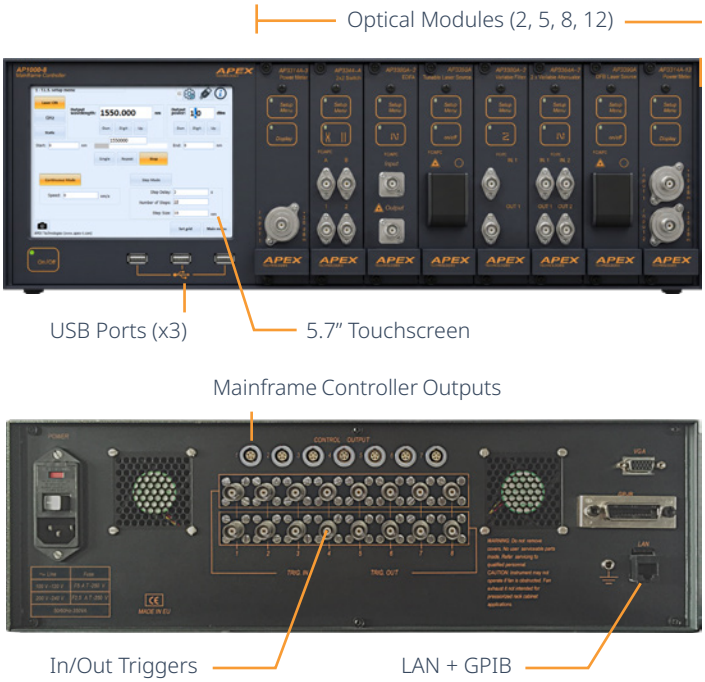
Optical Test Modules

A large selection of high performance optical modules to be configured within AP1000 mainframes.

Includes:
- Tunable Laser Sources
- Polarimeter
- Optical Amplifiers (EDFA)
- Power Meters
- Variable Optical Attenuators (VOA)
- Optical Tunable Filters
- Optical Switches

AP1000 Series Mainframes

Example of an AP1000-8 mainframe controller and 7x AP1000-12 extension racks, with a total of 92 laser modules.



AP1000 Series Specifications

	AP1000-2	AP1000-5	AP1000-8	AP1000-12
Type	Controller[1]			Extension Rack
Available Slots	2	5	8	12
Touchscreen	Yes			Through controller
USB Ports	3			
Remote Control	LAN			
Data Transfer	LAN, GPIB	LAN, GPIB	LAN, GPIB	
File Format	.txt (data), .bmp (screenshots), setup files			
Internal Hard Drive	64 GB			
Dimensions (W x H x D)	237 x 140 x 376 mm 9.3 x 5.5 x 14.8 in	341 x 140 x 376 mm 13.4 x 5.5 x 14.8 in	448 x 140 x 376 mm 17.6 x 5.5 x 14.8 in	448 x 140 x 376 mm 17.6 x 5.5 x 14.8 in
Power Requirements	100-120 / 220-240 VAC, 50/60 Hz			
Operating Temp.	+5 to 35°C			
Storage Temp.	-10 to 50°C			
Moisture	20 to 80% RH (no condensation)			

(1) Any controller can control other units, either controllers or extension racks (max. 7)

DFB Laser Modules

Specifications	AP3390A	AP3392A	AP3395A
Peak Emission Wavelength	ITU-Grid for C band	ITU-Grid for L band	1310nm
Linewidth @3dB	1 MHz		5 MHz
Output Power	20 mW *(Typical)*		16 mW *(Typical)*
Wavelength Accuracy	± 6 pm		
Wavelength Tunability	3 nm *(without mode hopping)*		
SMSR	45 dB *(Typical)*		
Min. Optical Isolation	30 dB		
RIN	-138 dB/Hz		-155 dB/Hz
PER	20 dB		–
Fiber/Connector Type	PM fiber, FC/PC		SMF-28, FC/PC

EDFA Modules

- Three (3) series : Booster / Amplifier / Pre-amp
- Gain-flattened option
- Large input power range
- Low noise figure

Specifications	AP3370A	AP3372A	AP3370B	AP3372B	AP3370C	AP3372C
	Booster Amplifier		Line Amplifier		Pre-Amplifier	
Wavelength Range	1528-1563nm	1568-1612nm	1528-1563nm	1568-1612nm	1528-1563nm	1568-1612nm
Input Power Range	-10 to +4dBm	-10 to +6dBm	-20 to 0dBm	-25 to -10dBm	-38 to -6dBm	-35 to -16dBm
Output Power	Select from +12 to +22 dBm				From -10 to +10 dBm	
Noise Figure	Typ: 4.5 dB / Max: 5 dB		Typ: 5 dB / Max: 6 dB		Typ: 5 dB / Max: 5.5 dB	
PDL	< 0.3 dB					
Pol. Dep. Gain	< 0.3 dB		< 0.5 dB			
PMD	< 0.3 ps		< 0.5 ps			
Pump Pow. Leakage	-30 dB max		–			
I/O Isolation	> 30 dB					
Return Loss	> 40 dB					
Fiber Type	SMF-28, 900µm loose tube, FC/APC (FC/PC on demand)					
Control	Manual Automatic fixed output control		Manual Automatic fixed output control Automatic fixed gain control		Manual	
Gain-flattened Flatness <1.5	Full range	1570-1609 nm	Full range	1570-1609 nm	Full range	1570-1609 nm

Polarimeter Module

Polarization analysis covering the C+L band

- Four Stokes parameters
- Instantaneous state of polarization (SOP)
- Degree of polarization of input light (DOP)
- Extinction ratio measurements of polarizers or alignement of PM fiber
- Very low PER measurement

Three different displaying modes:

- Jones graph
- Poincaré sphere
- Stokes parameters oscilloscope

Specifications	AP3321A
Wavelength Range	1260 – 1650[1] nm
Input Power Range	-60 to +10 dBm
Max. Sampling Rate	4000 S/s
SOP Accuracy	± 0.25° (-35 to +2 dBm) < 2° (-60 to +10 dBm)
SOP States	Full Poincaré sphere
Azimuth Accuracy	± 0.25° (-35 to +2 dBm)
Ellipticity Accuracy	± 0.25° (-35 to +2 dBm)
DOP Accuracy	± 1° (-35 to +5 dBm)[2]
Relative Power Accuracy	± 0.2 dB (-60 to +10 dBm)
Absolute Power Accuracy	± 1dB (-60 to +10 dBm)
Optical Connector	FC/APC (wide key)

(1) Factory calibrated up to 1630 nm. User can calibrate up to 1650 nm.
(2) Down to ±0.5° for C+L band only.

Optical Switch Modules

1x2, 2x2, 1x4, 1x8 switches

- Wide operating wavelength range
- Low insertion loss
- Low polarization dependent loss
- Fast switching speed

Specifications	AP3344A-2x2	AP3344A-2	AP3344A-4	AP3344A-8
Wavelength Range	1290 – 1330 nm / 1525 – 1610 nm			
Insertion Loss	< 0.8 dB	< 0.9 dB	< 1.0 dB	< 1.5 dB
Return Loss	> 45 dB			
PDL	< 0.07 dB		< 0.1 dB	
Crosstalk	> 60 dB			
Repeatability	± 0.02 dB		± 0.05 dB	
WDL	0.2 dB			
Switch Time	4 ms		10 ms	
Durability	10^7 times			
Optical Connectors	FC/APC (wide key)			

Variable Optical Attenuator Modules

- Two channels immediate display
- Attenuation controlled by Optical Power Meter module

Specifications	Single: AP3364A Dual: AP3364A-2	AP3364B-2		
		Dual mode	Single mode	Switch mode
Wavelength Range	1310 – 1550 nm			
Attenuation Range	30 dB		60 dB	–
Attenuation Step Size	0.1 dB			–
Attenuation Repeatability	± 0.05 dB			
Attenuation Backlash	< 0.2 dB			–
Temperature Dependent Loss	< 0.07 dB		< 0.1 dB	
Wavelength Dependent Loss	< 0.3 dB			
Polarization Dependent Loss	< 0.2 dB			
Polarization Mode Dispersion	< 0.1 ps			–
Return Loss	> 45 dB			
Response Speed	< 33 ms / dB			–
Max. Optical Power	300 mW (+25 dBm)			
Optical Connectors	FC/APC (wide key)			

Optical Power Meter Modules

- 2 inputs immediate display
- Scale modes : mW or dBm
- Min/Max percentage function
- Active Power Control function : connects with EDFA and VOA modules to enable a constant optical output

Specifications	AP3314A-x
Number of inputs	1 = AP3314A-1 2 = AP3314-11
Wavelength Range	800 – 1700 nm
Calibrated Wavelengths	980, 1310, 1480, 1550, 1610 nm
Display Ranges	Standard: -68 to +10 dBm
Intrinsic Uncertainty	± 0.2 dBm
Overall Measurement Uncertainty	980 nm: ±0.5dB ±0.2nW 1310–1610 nm: ±0.2dB ±0.1nW
Photodiode	InGaAs
Fiber Types	Single-mode 9/125 Multi-mode 50/125
Optical Connector	FC/APC wide key

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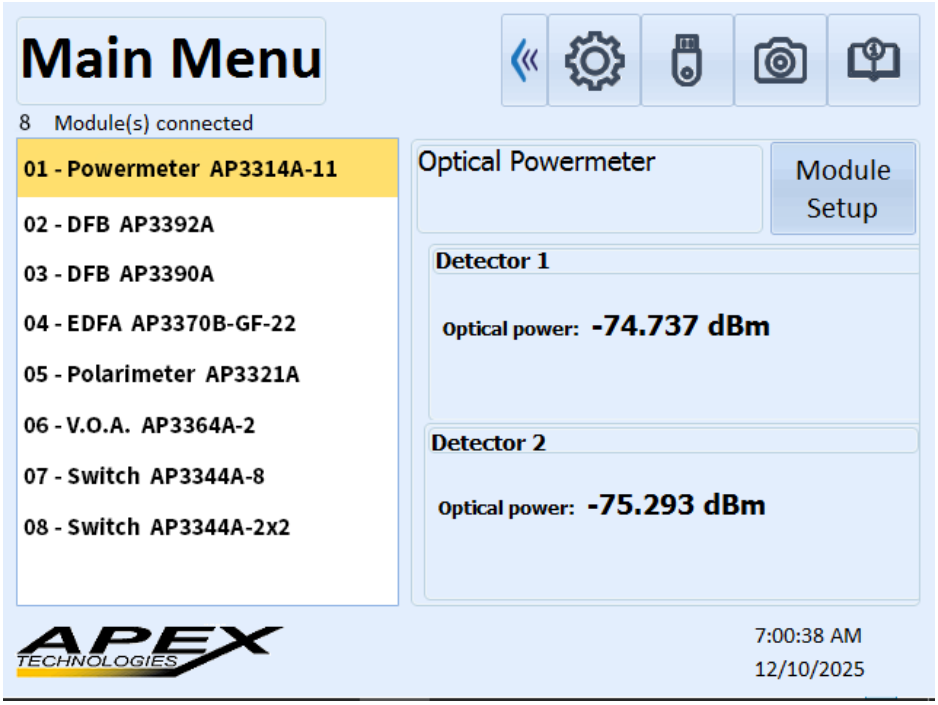

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