

Microwave Plasma-Atomic Emission Spectrometer (MP-AES)



Brand	:	Agilent
Model	:	MP-AES 4100
Location	:	K651 Room, 6 th Floor, Chaloeprakiet Building, Phyathai Campus
Custodian	:	PRADUP MESAAT

Description and Specification:

MP-AES delivers:	➤ Provides superior detection limits to flame AA.
Sample introduction:	➤ Includes quartz torch optimized base that automatically makes gas connections and aligns the torch. ➤ Includes single-pass glass cyclonic spray chamber and concentric nebulizer as well as a high matrix double-pass spray chamber. ➤ Peristaltic pump with variable speed from 0 to 80 rpm.
Gas controls:	➤ The plasma gas is fixed at 20 L/min and the auxiliary gas is fixed at 1.5 L/min for ease of operation. ➤ Nebulizer gas flow pressure control (80 to 240 kPa) providing a nominal flow range of 0.4 to 1.0 L/min.
Plasma generator:	➤ The microwave excitation features a solid state HV power supply, air cooled magnetron operating at 2450 MHz. ➤ Fixed plasma power of 1 kW for ease of operation. ➤ Plasma ignition using flow of auxiliary argon. It automatically switches to nitrogen for routine operation.
Plasma configuration:	➤ Vertically-oriented plasma for improved matrix handling with end-on or axial viewing for optimum sensitivity. ➤ Plasma viewing position, optimized for each wavelength.

Description and Specification:

Optical system:	<ul style="list-style-type: none">➤ Fast-scanning, high-resolution compact design, Czerny-Turner design monochromator with 600 mm focal length and fixed entrance slit for ease of operation.➤ Holographic diffraction grating with 2400 lines/mm is blazed at 250 nm for optimum UV performance.➤ Wavelength range 178–780 nm, purged with air for protection, or nitrogen at 10 L/min for sulfur determinations.
Detector:	<ul style="list-style-type: none">➤ UV-sensitive, back-thinned solid state CCD detector (532 x 128 pixels) designed specially for low-light level detection with > 90% quantum efficiency.➤ The CCD array detector collects the analyte spectra and neighbouring background spectra.
Signal stability:	<ul style="list-style-type: none">➤ < 2% RSD over 2 hours without internal standardization or any form of drift correction.
Resolution:	<ul style="list-style-type: none">➤ < 0.050 nm (measured as full width at half maximum)
Detection limits:	<ul style="list-style-type: none">➤ 3 sigma detection limits ($\mu\text{g/L}$) using a 10 second integration time.

Schematic Diagram

