

Excellence in Advanced Process Control

PlasmaScope

**Real Time Plasma Diagnosis
Advanced Process Control
Dry Etch Process End Pointing**



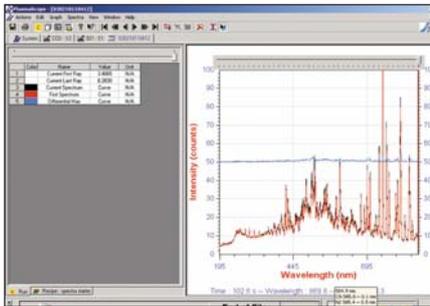
Explore the future

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- **Real time and accurate spectrum acquisition**

With its Jobin-Yvon high resolution holographic spectrograph equipped with a 2048 pixel CCD and Jobin-Yvon fast acquisition electronics, the **PlasmaScope** acquires plasma light emission from 190 to 850 nm in 8 ms. Continuous evolution of the famous SOFIE Digifamily process control systems brings benefits of sophisticated algorithms for data acquisition and signal treatment.



Spectrum acquisition

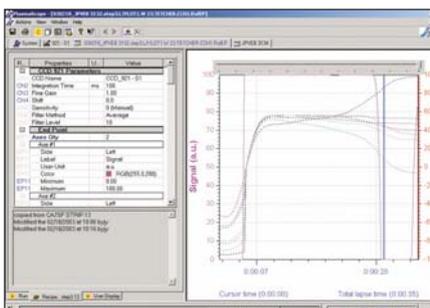
- **Quick and easy recipe editor**

This tool allows the process engineer to easily and rapidly build an efficient process recipe by one click navigation to functions.

It is easy to combine all these functions to build robust recipes for the most difficult plasma process.

- **Tools for efficient Plasma Diagnosis**

The Integrated formula editor gives easy access to a full range of mathematical functions. A user upgradeable library of emission wavelengths gives direct access to species identification. The Wavelength editor allows their combination for signal to noise optimization. The cascading windows design gives easy access to several mathematical operations such as filtering and ratios. Additional pages also show current, earlier, minimum and maximum spectra. Conditions can be easily activated in different zones of the run, multiple patterns detectable, multi rules. In addition to endpoints, alarms monitor other events during the run to detect process drifts.



End Point and recipe

- **Accurate end point on very low open area processes**

The possibility of using many significant wavelengths across the whole spectrum simultaneously make it possible to build recipes that can handle the most difficult process conditions like very low open area, multi stack etches and trenches.

- **Virtual Reprocessing**

Once an acquisition run has been stored in the database, it can be reprocessed digitally, to build a robust step for accurate process monitoring and control. It minimizes the number of wafers required for engineering. All reprocessed runs can be saved as production runs for production simulation and analysis.



**The Tool to
Improve Your
Yield**

Specifications

Spectrometer

- **Integrated Spectrograph** **CP 140 JY Imaging Spectrograph**
Jobin-Yvon CP 140 spectrograph integrates a super aberration-corrected, concave, holographic diffraction grating which acts as a collimator, dispersion and focusing system for superior imaging and spatial resolution.
- **Focal length** **140 mm**
- **Grooves** **285 gr./mm**
- **Wavelength Range** **190 – 850 nm**
- **Length of spectrum** **25.2 mm**
- **Average dispersion** **24.2 nm/mm**
- **Detectors** **CCD Line array detectors with 2048 pixels**
- **Integration time** **8 ms to 10 s**
- **Resolution** **Better than 1.2 nm**
- **Fiber connection** **SMA or JY Line Bundle adaptation**

Computer and Hardware

- **Portable (dedicated to single chamber)** **13.3" active matrix display 1024x768x16M color**
- **32-bit High Speed Processor** **Integrated acquisition and remote boards**
- **≥ 256 Mb Ram** **≥ 20 Gb hard disk**

Communication

- **Remote** **RF on / stop etch / Deep etch**
- **RS 232** **SECS, TTY, Pass Through**
- **TCP/IP** **100Mb/s**
- **USB port** **CD writer / Data Archives**

System

- **Portable dimensions** **210 x 400 x 292 mm**
- **integrated QWERTY keyboard** **108 keys and touch pad included**
- **Weight** **15 kg**

Options

- **Optical fibers SMA connector or JY classical line bundle (3 or 7 m length)**
- **External CD-RW**

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