

PERFORMANCE ENHANCEMENTS

Sustainable Solutions is Our Ongoing Commitment

Concept Part Solutions is dedicated to extending the lifetime of your maturing semiconductor manufacturing equipment. As your toolsets age and new processes emerge, we pursue every opportunity through our Continuous Improvement Program (CIP) to offer important enhancements that increase the reliability, productivity, and performance of your install base.



Concept One Dielectric

Dual Endpoint Detection

Concept Part Solutions is committed to improving the sustainability of the Concept One system. Proven enhancements, originally developed by the OEM, are available for the C1. The Dual Endpoint for Nitride processes can decrease particles and provides increased control for the end user.

Accurate endpoint detection using a single channel system is often unreliable. This is especially true on Nitride films which produce a "double peak" trace that can trigger a false endpoint. This system utilizes a Dual detector configuration that is tuned for the Fluorine and Carbon Monoxide wavelengths. The script program in the EPD controller ratios the two signals in order to determine endpoint. A very dependable and accurate endpoint can be determined when utilizing this method. (See Figure 1)

Angled Detector Head

The new Dual Endpoint Detection enhancement offers three primary improvements to the single head EPD. These are:

- Two wavelengths
- A script based on film type
- An angled head for emission detection

In order to monitor the slowest cleaning station (Load/Unload) for a Concept One system, the dual detector is angled on the window of the C1 so that it receives the signal from the slowest etching station. The optimal angle is 45° for a C1-150 and 30° for a C1-200. Figure 2 shows the new placement of the dual endpoint detector for the C1 equipment.

Two Wavelength Detection

For the Concept One platform, the two wavelengths utilized by the detector, F (704nm) and CO (483nm), are signals from the primary clean reactant (free F) and clean by-product (CO). The clean chemistry process is shown in Figure 3.

Dual End Point Detection (EPD) provides a number of system benefits. It can decrease the hardware degradation caused by overexposure to the fluorine clean environment and elevated temperatures. And it can reduce particles and wet clean frequency to improve process and particle repeatability and boost system productivity. Additionally, with the increasing awareness and concern about global warming and the high cost of etch gas, the need for proper in-situ plasma clean is vital.

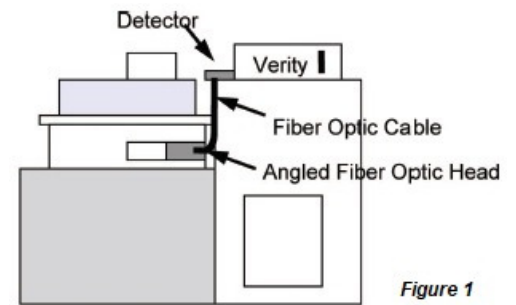


Figure 1
Dual Endpoint Detection

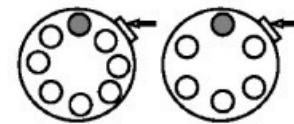


Figure 2
Concept One 150mm Concept One 200mm

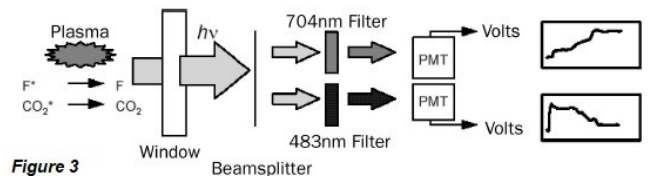


Figure 3

Benefits

- Reduces clean gas consumption*
- Reduces particles by up to 10%*
- Extends hardware lifetime

*Based on OEM BKM



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Concept One 150mm and 200mm
Dual Endpoint Detection

Get More Information on System Performance Enhancements

To find out how to improve the performance and productivity of your CPS supported systems, call your local CPS Sales and Service Office for complete ordering information, or visit www.conceptpartsolutions.com

System Prerequisites:

- Interface Computer 486 type or higher
- SW Version 4.35 or higher

Ordering Information:

If System to be upgraded has Single Channel EPD installed:

Retrofit Kit C1 150	05-045725-00
Retrofit Kit C1-200	05-045724-00

If System to be upgraded has No EPD installed:

Retrofit Kit C1 150	05-113581-00
Retrofit Kit C1-200	05-113582-00

Some Upgrades may require an audit of your System; Contact your local CPS Representative to verify the Upgrade Kit before ordering.