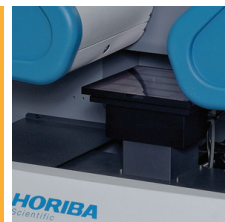


## MyAutoView Vision and Microspots

### Best Positioning & Measurement Precision!

Technical Note  
SE-TN05



Spectroscopic ellipsometry is an optical technique which measures the changes in the polarization state of light reflected from the surface of a sample. **Polarization is very sensitive to surface quality, contaminants such as dust and scratches, and patterned areas.** The MyAutoView vision system is a patented design allowing operators to view the measurement spot on all types of samples (rough, smooth, transparent and reflective surfaces) in order to ensure measurements are taken at exactly the right position, every time.

### Comparison: Standard vs. MyAutoView Vision System

Standard imaging designs place a CCD camera at normal incidence to the sample surface. In order to obtain an image with the CCD in this position, the sample must diffuse light, making this design limited in its range of applications.

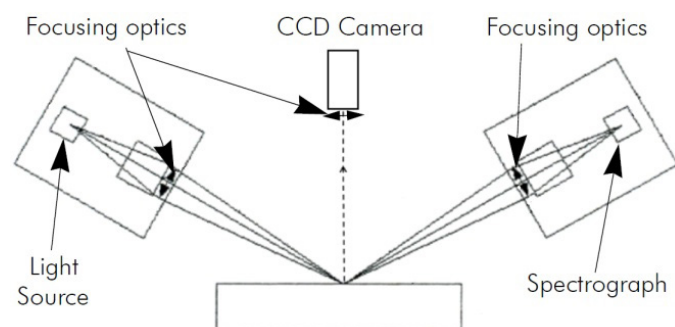


Figure 1: Standard imaging system design

The MyAutoView vision design places the CCD camera in the optical head, allowing for direct visualization of all types of samples, along with improved brightness and contrast for sharper and clearer images.

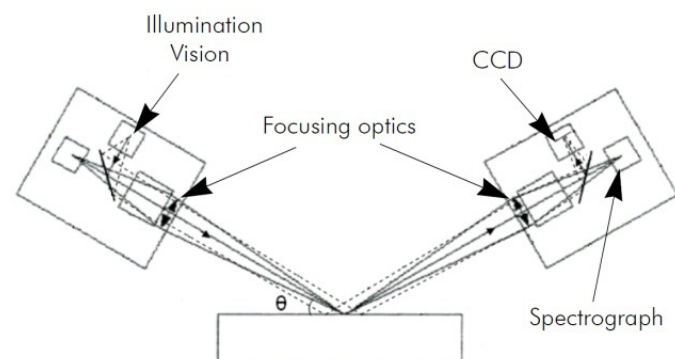


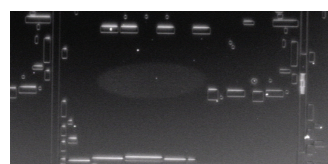
Figure 2: MyAutoView vision system design

### Automatic, Achromatic Microspot

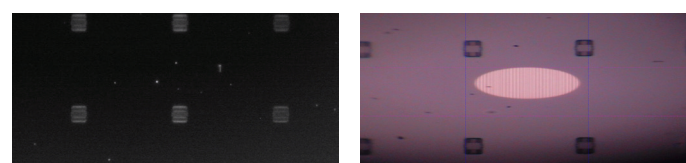
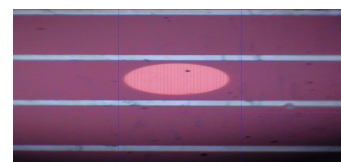
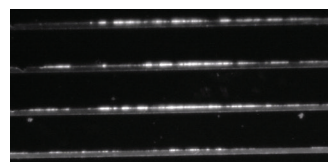
The microspot capability allows the operator to reduce the incident spot size in order to measure patterned, contaminated, rough, inhomogeneous or curved samples. The microspots provided on all HORIBA systems are achromatic, since lenses or external optics are not utilized. And, spot size selection is performed automatically through the DeltaPsi 2 software, so no external hardware changes are necessary.

**The MyAutoView vision system, together with the microspot capability, is a powerful combination for visualizing and measuring many different types of samples which can not be visualized by standard imaging designs or measured with a large standard spot size.**

| Conventional Vision System | MyAutoView Vision System |
|----------------------------|--------------------------|
|----------------------------|--------------------------|

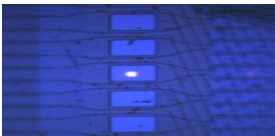

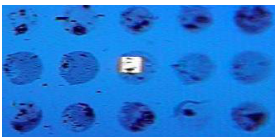
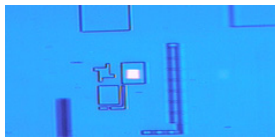
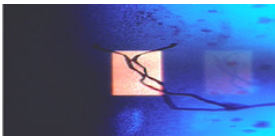
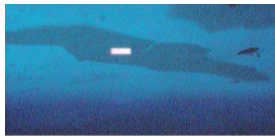
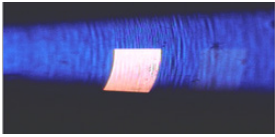


The spot is difficult to see with a standard vision system, on a microelectronic structure.



The spot is not visible on patterned structures, with a standard vision system.

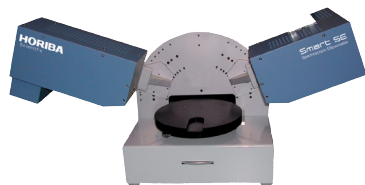
## Examples of the MyAutoView vision system at work:

| Sample Type                           | Advantages of Microspot and Vision  | Vision Examples  |   |
|---------------------------------------|---|--|---|
| Patterned or Microstructured          | The MyAutoView vision system, together with a microspot, allows for the direct visualization and measurement of a feature on a patterned or microstructured sample in order to measure over one homogeneous region. |  <br>  |   |
| Contaminated, Rough, or Inhomogeneous | The MyAutoView vision system, together with a microspot, allows for the direct visualization and optimization of the measurement position when contaminated, rough, or inhomogeneous samples are measured.          |     |   |
| Curved                                | The MyAutoView vision system, along with a microspot, allows for easy positioning of the measurement spot for measuring the planar surface of curved samples.   |    | <i>Note: Spot shown is not on planar surface, as shown by tilted spot</i> |

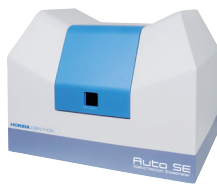
Automatic microspot are available on all HORIBA ellipsometers, and the patented MyAutoView vision system comes standard on all HORIBA ellipsometers, except the UVISEL.

| Ellipsometer | Number of Spots        | Smallest Microspot | MyAutoView Vision? |
|--------------|------------------------|--------------------|--------------------|
| Smart SE     | 7 (auto)               | 75 µm              | Yes                |
| Auto SE      | 7 (auto)               | 25 µm              | Yes                |
| UVISEL       | 3 (manual) or 4 (auto) | 80 µm              | No*                |
| UVISEL 2     | 8 (auto)               | 35 µm              | Yes                |

\*Optional camera to view the measurement spot on the sample is available.



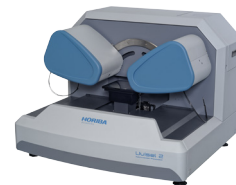
Smart SE



Auto SE



UVISEL



UVISEL 2



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