Mapping for LED Manufacturing

LED Manufacturing Non-Contact Sheet Resistance and Film Thickness Mapping

A structure used by one of our customers has a substrate material that is highly doped. In this case the layers deposited above the substrate would not meet the requirement that they have sheet resistance that is at least 10 times less than that of the substrate.

During a successful demonstration of a Lehighton Electronics system with this customer, the sample appeared to be glassy and milky-yellow. The customer sample may have been a monitor layer deposited on a fused silica substrate. In many semiconductor development and manufacturing operations it is necessary to characterize a critical layer by depositing the layer on fused silica. This procedure simplifies testing. Following the test, the layer can be stripped and the fused silica substrate can be reused. The highly insulating properties of fused silica make it an ideal substrate for measuring the sheet resistance of a deposited layer with LEIâs non-contact systems.

This application for LED manufacture is routine for the LEI systems. Mapping results will give a good representation of the deposited layer uniformity.

The difficulties encountered with 4-point probes that use mechanical contact to establish electrical continuity are avoided.

With LEI non-contact systems you have:

- no probe contamination
- no sample damage
- no probe damage
- no contact resistance

Potential LED customers should request **Application Analysis Form** so that we can understand their needs.