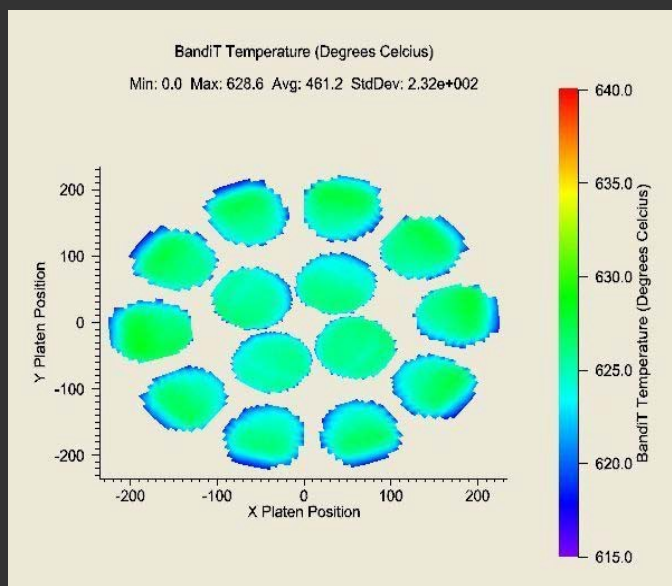




kSA BandiT – Multi Wafer and Mapping

- View and store data for each wafer individually
- Tune heaters using wafer and platen temperature mapping
- Identify spatial variations in substrate temperature
- NEW user defined or auto-generated template analysis feature

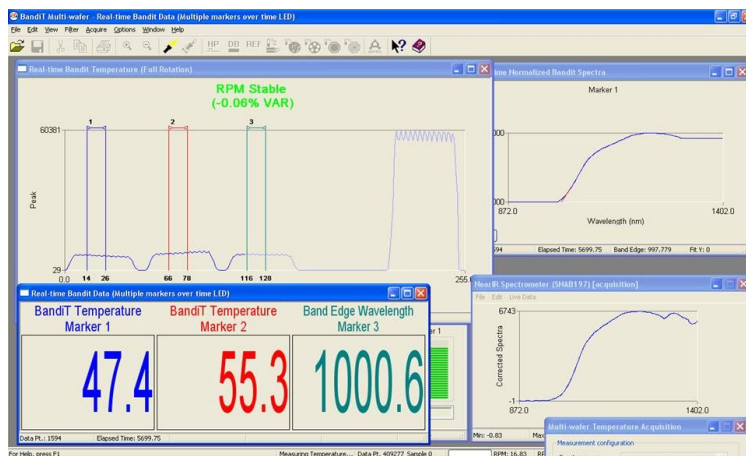


By combining kSA BandiT, a band-edge based temperature monitoring system, with sophisticated rotational synchronization and a servo motor driven detector, full platen/susceptor temperature mapping and analysis of individual wafers is possible during MBE and MOCVD growth!

The kSA BandiT Multi-Wafer Production Option (B-MWP) provides temperature monitoring for each wafer. The user can determine whether data is collected at a specific location or averaged over a wide marker.

The kSA Scanning Detector Option (B-SD/U) provides an automated servo motor-controlled detector for scanning the radius of the platen while the platen is rotating. This yields a powerful technique for obtaining full wafer and platen temperature mapping. Thermal uniformity profiles can be monitored and adjusted via multiple filament heating zones. The mapping system is also available for single wafer MBE and MOCVD systems where full wafer temperature uniformity measurements are desired.

Multi-wafer and/or mapping configurations are now available for most commercial single and multi-wafer systems and, in most cases, individual wafer temperatures can be recorded directly in your chamber's control software.



Above: Screenshot of kSA BandiT MW software interface with three temperature markers set.

Top: kSA BandiT Band Edge temperature map for a 14 x 4" platen of GaAs wafers in a Veeco GEN2000 MBE.



New Wafer Template Analysis

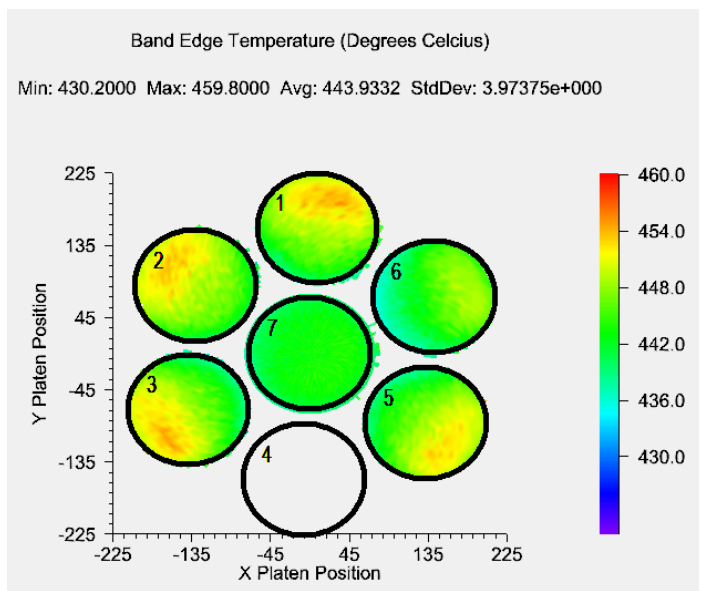
kSA BandiT Scanning Detector software has a new feature—Template Analysis!

This feature allows you to load a pre-defined and pre-numbered wafer template to consistently analyze the statistical data for each of your wafers as well as the run as a whole. It provides valuable information including the average, maximum, minimum, and standard deviation of temperature for each wafer and the entire defined wafer region. You can also define exclusion regions to avoid dummy wafers or edge effects that you do not want as part of your statistical analysis.

Consistency is critical to your end product. The measurement of the temperature uniformity is crucial to an optimized process. Give your product the advantage today with kSA BandiT multi wafer and scanning detector options.

Right: kSA BandiT temperature map of a 7 x 6" GaAs wafer populated carrier showing spatially-resolved, full wafer temperature. Customizable template analysis provides statistics for each individual wafer. Note that Pocket 4 is not in the listed temperature range because it is a "dummy" wafer (i.e. not a standard growth wafer).

Below: Individual wafer statistics for the corresponding temperature map to the right. This gives insight into your minimum and maximum temperatures as numerical data in addition to the visual maps.



Total Pocket Statistics (All Points)					Individual Pocket Statistics (All Points)					
Min.	Max.	Avg.	StdDev.	Out of Spec.(%)	Min.	Max.	Avg.	StdDev.	Out of Spec.(%)	Pocket
400.7000	455.7000	440.8933	12.35057	13.603	438.9000	455.7000	447.6446	3.76253	2.016	1
					440.2000	454.4000	448.0768	3.11239	0.000	2
					437.7000	455.2000	447.0042	4.12112	4.435	3
					400.7000	406.6000	403.6123	1.08048	100.000	4
					437.9000	453.6000	446.3374	3.98506	7.525	5
					435.7000	449.9000	442.9382	3.79980	27.833	6
					438.9000	446.1000	442.9629	1.17995	1.310	7

Contact k-Space to discuss the advantages of BandiT Scanning Detector or Multi-Wafer software including:

- Standard viewport integration
- Customizable templates for your wafer carrier that provides statistics for each wafer
- User-defined temperature marker locations
- Fully automated operation
- Engineer and operator-level interface
- Single point, selected area, or wafer average temperature