**6XX0**

Term used to specify any of the Surfscan 6000-series instruments.

**Access code**

The characters a user must enter at the logon screen.

**Application**

A software program such as the Scan application.

**Application icon**

Graphic symbol representing a software application. The System Menu displays application icons.

**Application window**

The main window opened by an application.

**Area**

The term that identifies events larger than the maximum particle size for a scan (as set by the recipe’s Area From parameter). Defect maps display areas as a series of chords.

**Area From**

A recipe parameter that sets the maximum size for LPDs during data collection. Defects larger than the Area From value are classified as areas.

**Arrow keys**

The arrow keys on the operator keypad. These keys can be used to highlight a menu item or dialog box option or to move a text or graphics cursor.

**Attributes**

In statistical process control, qualitative data that can be counted. Examples include defects per wafer, number of failed die per wafer, defect density per wafer. Attributes are measures on a discrete scale and use Poisson statistics.

**Automatic operation**

A scan option that allows each selected wafer in a cassette to be scanned automatically in sequence. See scan mode and scan sequence.

**Back up**

To save data from the instrument’s hard disk to diskettes or a network drive (if available). The data can be restored at a later time.

**Bin splits**

Color-coded defect or haze ranges. The instrument displays data on maps and histograms using thecolor-coding scheme. Data within a bin split range can be enabled or disabled by clicking a bin split button in the wafer summary. Bin split ranges can be changed through the histogram.

**C-chart**

In statistical process control, an attribute control chart used to track the number of non-conformities with a constant sample size, for example, to track the total number of defects per wafer.

**Calibration curve**

A curve that matches cross section (scattering efficiency) measurements to defect diameters for a given substrate, or that matches measured haze to actual haze.

**Cassette catalog**

A part of the Scan window. When a cassette is loaded on an indexer and cataloged, the cassette catalog displays which slots are occupied. The cassette catalog can be used to select one or more wafers for scanning.

**Catalog (a cassette)**

 To list the cassette slots occupied by wafers. Catalog scan To catalog and then scan wafers from a cassette. The cassette can be cataloged by slot number in 1 to 25 order or 25 to 1 order.

**Choose**

To pick a menu item or other item that starts an action. You can choose an item using the mouse or keypad.

**Chord**

A line representing one sweep in an area defect. A series of chords forms an area. See area.

**Click**

Pressing and releasing the left or right mouse button without moving the mouse. Click the left button on a menu title, on an icon, on a dialog box option or command button, or in a window to select the item. Left and right buttons have different functions when clicking. Compare to double-click.

**Coefficient of variation**

A calculated value used when calibrating PSL spheres or haze. This value is the product of variations in instrument sensitivity, sampling errors, Poisson noise broadening, and the natural dispersion of PSL sphere sizes. For a given sample, the coefficient of variation = standard deviation/mean x 100.

**Control chart**

In statistical process control, a graphic representation of a characteristic of a process showing plotted values of some statistic gathered from that characteristic and one or two control limits. A control chart is used to judge if a process is in control and as an aid in achieving and maintaining statistical control.

**Control limit**

In statistical process control, a line or lines on a control chart that are used as a basis for judging the significance of variations from subgroup to subgroup. Variation beyond a control limit is evidence that special causes are affecting the process. Control limits are calculated from process data.

**Cursor**

An object on the screen that can be moved with the mouse or arrow keys and that allows the user to locate or edit data. See limit cursor, particle cursor, and text cursor.

**Cycle control**

A control within dialog boxes that when clicked presents options one at a time. Click the left button to cycle forward through the list of options. Click the right button to cycle backward.

**Data compression**

A technique used to reduce the amount of disk space required to store data.

**DataHub**

A Tencor Instruments data analysis system.

**Database**

A collection of data organized by records. The instrument’s database can contain data summaries, maps, user IDs, system log records, recipe records, and other data.

**DECnet**

A local area network protocol that allows the instrument to transfer files to a host computer.

**Desktop**

The software running on a desktop computer rather than an instrument. Data data can be analyzed by importing it into the desktop.

**Dialog box**

A rectangular box on the screen that can contain a combination of lists, options, data entry fields, and command buttons. A dialog box appears when the instrument needs more information before performing an operation.

**Direct access mode**

See One-Wafer mode.

**Disk space**

The total amount of space available on the hard disk. Free disk space is the amount of disk space unused.

**Directory**

Computer files are stored on the computer’s hard disk in directories. The directory name identifies the location where the files are stored. See Path.

**DOS**

Disk Operating System, also called MS-DOS. The central program used to control and manage the computer system.

**Double-click**

The mouse action performed when you press and release the mouse button twice in rapid succession. The first click selects the item and the second click performs the action associated with the item. When you double-click the left button on an application icon, the application starts. Left and right buttons have different functions when double-clicking. Compare to click.

**Drag**

The mouse action performed when you hold down the mouse button and move the mouse. Dragging can be used to choose a menu item and to move a graphics cursor.

**Drive (disk)**

The disk drive identifier. A single character followed by a colon. For example, C: refers to drive C.

**Edge exclusion**

The area at the edge of the substrate that is excluded from data collection during a scan. Exclusion regions Regions on a substrate that are excluded from data collection.

**Export**

To save selected data, such as recipes, wafer summaries, and wafer maps, to diskette. Exported data can be imported into another Surfscan 6000-series system. See import.

**Field**

A rectangle in a dialog box used for entering data. The text cursor (a vertical bar) generally appears in the first field in a dialog box. Also, a data item stored in a database. A collection of related fields is called a record.

**Gain**

A recipe parameter that sets the overall measurable defect or haze data collection range.

**Graphics cursor**

Graphics cursors appear as vertical bars in histogram windows and can be used to change defect bin splits.

**Haze**

Background scatter caused by imperfections in the surface of the substrate, such as intrinsic substrate roughness and polishing damage. Haze data can be displayed in a map, histogram, or both. Haze is measured in parts-per-million (ppm) of the incident beam.

**Haze average**

The total haze in parts-per-million divided by the measurable wafer surface area.

**Haze peak**

The maximum measured haze value.

**Haze region**

The percentage of the measurable wafer surface area containing haze.

**Histogram**

A plot of data that has possible values on one axis and frequency of those values on the other axis. In the Scan application, the histogram displays the distribution of defects or haze from the last scan. When a defect map is displayed, the histogram shows defect size versus counts. When a haze map is displayed, the histogram shows haze value (ppm) versus counts.

**Histogram zoom**

Changing the defect or haze range through the histogram.

**Hold (a scan)**

Press the MICROSCOPE key. When a scan is on-hold, a MicroView can be performed on the wafer.

**Home**

The position of the indexer when it is fully raised.

**Import**

To load data previously saved in an export file. See export.

**Indexer**

The mechanism that moves the cassette up and down.

**Keypad**

Operator keypad provided on the instrument console. The keypad can be used to enter data, move cursors, and execute commands.

**Light point defect**

An event characterized as a particle.

**Limit marker**

The marker used to change defect or haze bin limits in the histogram.

**Local area network**

A computer network connecting a host computer to other nodes on the network. The system provides a DECnet local area network option.

**Locator**

The plate upon which a cassette rests when in the indexer. The locator must be changed for different cassette sizes.

**Log off**

Sign off from the instrument by choosing the Log Off icon from the System Menu.

**Log on**

Sign on to the instrument by entering your access code.

**Lot ID**

The ID assigned to a wafer lot. This ID can be entered in the Scan application.

**Lot summary**

A summary of the data collected for wafers in a cassette. The instrument displays a lot summary when a scan sequence completes or when you press HOME after a scan.

**LPD cursor**

The cursor used in a magnified (zoomed) wafer map. This cursor automatically snaps to the nearest LPD. The particle box displays the location and size of the particle.

**Map-to-Map**

A defect comparison technique. The before map and after map are compared and the instrument generates an added defects map (defects found on the after map but not on the before map), removed defects map (defects found on the before map but not on the after map), and common defects map (defects common to both maps).

**Measurable (wafer) surface area**

The substrate area measured by the instrument. The total substrate area minus the edge exclusion and exclusion regions, if any.

**Menu**

A list of commands. Two types of menus are supported — full-screen menus and drop-down menus. Full-screen menus such as the System Menu display application icons. You can start an application by double-clicking the left button on its icon. A menu in the menu bar opens when clicked. See menu bar.

**Menu Bar**

Menu bars are displayed at the top of application windows and list menu titles. You can open a menu listed in the menu bar by clicking on its title. You can choose from the menu by clicking on an item.

**MicroView**

An analytical tool that displays the topography of a substrate’s surface and that reveals the characteristic light scattering distribution often associated with contaminants. MicroViews can be rendered in color or wireframe and can be viewed using different perspectives.

**Microsoft Windows**

A graphical user environment developed by Microsoft Corp. that uses windows to present information and a pointing device, usually a mouse, for user interaction.

**On-screen keypad**

The miniature keyboard displayed on the screen that is used for entering alphabetic and numeric data with the mouse.

**One-Wafer scan**

A scan mode in which only one wafer is selected for scanning. Also called Direct Access mode.

**Option group**

A group of fields, check boxes, option buttons, or command buttons found on dialog boxes.

**Out-of-control action**

In statistical process control, a list of steps to take when a process is flagged as out-of-control. The aim of these actions is to bring the process back into control.

**Panning cursor**

The cursor that allows you to select an area of the magnified wafer map to view.

**Panning window**

The window that appears at the upper left of a magnified wafer map and that allows the user to specify the general area of the wafer to magnify. See panning cursor.

**Pareto chart**

A plot of data that has characteristics of the data on one axis and the frequency of those characteristics on the other axis. For example, defect type versus number of each defect type.

**Path (to file)**

The location of a file or directory. A complete path consists of a drive identifier (A:, for example) followed by the directory and subdirectory names. In C:\DATA\TEMP\TEST.DAT, the path to the

TEST.DAT file is C:\DATA\TEMP.

**Pie chart**

A plot of data represented by a circle divided into pie-shaped segments. Each segment represents a characteristic of the data set. The size of each segment is proportional to the percentage of the full data set represented by the characteristic.

**Point**

To move the mouse until the tip of the pointer overlaps (points to) an item on the screen. See pointer.

**Pointer**

The object on the screen that moves when you move the mouse. The pointer changes into other shapes to indicate certain modes or when the system is busy. For example, the pointer changes into the Tencor logo when the software requires time to perform an action. The Tencor logo pointer can be moved on the screen, but you cannot perform another action until the pointer changes back to its normal shape.

**Process**

The combination of people, machine, equipment, raw materials, and environment that produces a given product or service.

**PSL spheres**

Polystyrene latex (PSL) spheres on a substrate are used when calibrating the instrument for a given substrate, film thickness, and defect size.

**Query**

A term that refers to obtaining a subset of data from a database by creating a set of data selection instructions. You use queries when exporting data, reviewing wafer data stored in the database, and managing the system log, for example.

**Range**

A measure of the variation in a data set. It is calculated by subtracting the lowest value in the data set from the highest in that same set.

**Recipe**

A set of instrument data collection, data display, configuration, and sort parameters that are stored by a unique name. The name of the current recipe is displayed in the Scan window title bar.

**Rendering**

A MicroView display format: color or wire frame.

**Restore** To return data previously saved by a backup operation.

**Sample**

In statistical process control, one or more individual events or measurements selected from the output of a process. Sample size is denoted by the letter n.

**Sample wafer**

A wafer having defects of a known diameter and that is used for calibrating the instrument.

**Scan**

To collect defect or haze data from a substrate. The Surfscan 6000-series instrument collects and processes data using the data collection, data display, configuration, and sort parameters specified in the current recipe. The instrument displays the results of the scan and can print or save the data.

**Scan operation**

Automatic or manual. In automatic operation, the instrument scans all wafers (or selected wafers) automatically in the specified scan sequence. In manual mode, the operator must press START for each wafer scan. See scan sequence.

**Scan sequence**

The order in which wafers in a cassette will be scanned.

**Select**

To highlight an item by clicking it with the mouse or by using the keypad.

**Select button**

A button within dialog boxes that when selected opens another dialog box.

**Selection bar**

The highlighted bar or dotted rectangle appearing in a dialog box that indicates the option or command button that will be selected if you press the ENTER key. The selection bar can be moved by using the keypad.

**Slot selector**

A control displayed in Cassette Catalog window that allows you to choose slots for scanning.

**Sort**

In the scan application, sort parameters specify the pass/fail limits. When two cassettes are used, substrates can be sorted to appropriate cassettes.

**SPC**

See Statistical Process Control.

**Standard deviation**

A measure of the spread of the process output or the spread of a sampling statistic from the process.

**Statistical control**

A condition describing a process from which all special causes have been removed, evidenced on a control chart by the absence of points beyond control limits and by the absence of non-random patterns or trends within the control limits.

**Statistical process control**

The use of statistical techniques such as control charts to analyze a process or its output so as to take appropriate actions to achieve and maintain a state of statistical control and to improve the capability of the process.

**Status box**

The box in the lower left of the Scan window that displays the scan sequence, scan mode, and status messages.

**Subgroup**

A collection of samples.

**Substrate record**

A database record for a given substrate and film thickness that contains calibration data.

**Summary**

The scan summary results.

**System log**

A list of activities or events performed on the system. Using the ViewLog utility, the system log can be viewed and printed. Log entries can be deleted when no longer needed.

**System Menu** The System Menu displays icons of the applications available to the user.

**Tencor File Format**

A file interchange format that is used for analyzing data on a review station or Surfscan SWIFT/ Station.

**Text cursor**

The vertical straight line appearing in fields. The text cursor marks the location where characters will appear when typed.

**TFF**

See Tencor File Format.

**Threshold**

The bottom limit of the defect or haze range for a scan.

**Throughput**

The speed at which the instrument processes wafers.

**Tile**

The smallest area on the wafer when collecting haze values. Each tile is 832 x 860 µm. Also, refers to an action of displaying more than one window at a time on the screen.

**Title bar**

Each application displays a title bar at the top of the application window. The title bar shows the application name, current recipe in parentheses, communication mode—Local or Remote—and window control buttons.

**Trend chart**

A plot of data that preserves the time-order sequence in which the values occur. Also called a running record.

**User ID**

A customer-defined data field that is stored in the database.

**User names**

The names assigned to operators, engineers, system managers, and other instrument users. This name must be supplied when starting the instrument and determines which functions the user is allowed to perform.

**Variables**

In statistical process control, those characteristics of a part or process that can be measured. Variables are measured on a continuous scale and are described by normal statistics.

**Wafer comment**

A comment that can be applied to a wafer.

**Wafer ID**

A name, number, or other identifier applied to a wafer. Wafer IDs are stored in the database.

**Wafer map**

An area on the screen that displays a defect or haze map of the wafer. A part of the Scan and Browser Review windows.

**Wafer summary**

An area that displays wafer scan results, defect and haze ranges, and controls for enabling or disabling the display of ranges. Wafer summaries are displayed in the Scan and Browser Review windows.

**Window**

Rectangular area for displaying and running an application program. The Scan application displays the Scan window.

**X/MR-chart**

In statistical process control, a variables control chart used to track the mean and moving range of a data set having a sample size of one. The moving range is calculated by taking the absolute value of the difference between successive data points.

**XY coordinate tracking**

An optional feature that allows extremely accurate X-Y coordinate tracking between the Surfscan 6000-series instrument and other devices, such as a scanning electron microscope.

**Zoom**

To magnify a wafer map. The instrument provides five magnification levels.