

Table of Contents

INTRODUCTION.....	v
• How to Use This Manual	v
• Terms Used in this Manual.....	v
• Fonts Used in this Manual.....	v
PC Hardware Requirements	vi
Software Installation	vii
• Installing DataWorker LE on a PC with Windows 95, 98 or NT.....	vii
• Starting the Software.....	vii
1.0 A Look at DataWorker LE.....	1
1.1 DataWorker LE Workbook Features.....	1
1.2 Standard Worksheet functions.....	3
1.2.1 Worksheet tabs	3
1.2.2 Selecting Worksheets.....	3
1.2.3 Split-bar	3
1.2.4 Worksheet Tab Scroll Arrows	3
1.2.5 Scrollbars.....	4

2.0 Worksheet Descriptions.....	5
2.1 Cover Worksheet	5
2.1.1 Cover Worksheet Menus and Toolbar	6
2.1.2 Report Image	7
2.1.3 Company/Report Name	8
2.2 Finder Worksheet	9
2.2.1 Finder Menus and Toolbar Buttons	10
2.2.2 Parameter Group Row	10
2.2.3 Parameter Labels	11
2.2.4 Parameter Units	11
2.2.5 Data Run Rows	12
2.2.6 Filters	13
2.3 Graph Worksheet	15
2.3.1 Graph Worksheet Menus and Toolbar Buttons	16
2.3.2 Mini Finder	16
2.3.3 Magnify Map	17
2.3.4 Data Table	17
2.3.5 Sensor Location Descriptions	18
2.3.6 Channel Check Boxes	18
2.3.7 Status Bar	18
2.3.8 Data Tabs	19
2.3.8.1 Values	19
2.3.8.2 Statistics	20
2.3.8.3 Basic Parameters	20
2.3.8.4 Misc. Parameters	20
2.3.8.5 X Scale	21
2.3.8.6 Y Scale	21
2.3.9 The Data Graph	22
2.3.9.1 X and Y-Axes and Labels	22
2.3.9.2 Data Plots	23
2.3.9.3 X-Ref(ERENCE) Line	24
2.3.9.4 X-Cursors	25
2.3.9.5 X-axis Units	26
2.4 Data Worksheet	27
2.4.1 Data Worksheet Menus and Toolbar Buttons	28
2.4.2 Individual Parameters	29
2.4.3 Individual Data Points	30
2.5 Documentation Worksheet	31
2.5.1 Documentation Worksheet Menus and Toolbar Buttons	32
2.5.2 Note Cells	32
2.6 Report Worksheet	33
2.6.1 Report Worksheet Menus and Toolbar	34
2.6.2 Report Configuration	34
3.0 Menu and Tool Commands.....	35
3.1 File Menu	35
3.1.1 New	35
3.1.2 Open	36
3.1.3 Close	36
3.1.4 Import File(s)	37
3.1.5 Save	38

3.1.6 Save As	38
3.1.7 Backup Database	39
3.1.8 Port Configuration.....	40
3.1.9 Page Setup	41
3.1.10 Page Header / Footer	42
3.1.11 Print Preview	43
3.1.12 Print	44
3.1.13 Print Report	45
3.1.14 Recent Files <u>1</u> , <u>2</u> , <u>3</u> , etc... ..	45
3.1.15 Exit.....	45
3.2 Edit Menu	46
3.2.1 Undo	46
3.2.2 Redo	46
3.2.3 Remove Row.....	46
3.2.4 Hide Row	46
3.3 View Menu.....	47
3.4.1 Toolbar.....	47
3.4.2 Status Bar	47
3.3.3 Zoom In.....	47
3.3.4 Zoom Out.....	47
3.3.5 100%.....	48
3.4 Format Menu	49
3.4.1 Bold.....	49
3.4.2 Italic	49
3.4.3 Underline	49
3.4.4 Alignment (Left, Center, Right).....	49
3.5 Instrument Menu	50
3.5.1 OM-550.....	50
3.5.2 Read OM-5000	51

3.6 Tools Menu	52
3.6.1 Magnify Tool	52
3.6.2 Notes Tool	54
3.6.3 Line Color	55
3.6.4 Fill Color	55
3.6.5 Move to Front	56
3.6.6 Move to Back	56
3.6.7 Move Forward	56
3.6.8 Move Back	56
3.6.9 Line	57
3.6.10 Rectangle	57
3.6.11 Round Rectangle	57
3.6.12 Ellipse	58
3.6.13 Polygon	58
3.6.14 Y-Reference	58
3.7 Window Menu	59
3.7.1 Cascade	59
3.7.2 Tile	59
3.7.3 Open File	59
3.8 About Menu	60
3.8.1 Index	60
3.8.2 Using Help	60
3.8.3 DataWorker	61
3.8.4 Context Help	61
3.8.5 Copy Button	61
APPENDIX A: Toolbar Buttons & Pull-Down Menus	62

INTRODUCTION

• How to Use This Manual



This **Software User's Guide** explains how to use OM-550/5000 Windows Software.

This manual is written for users of varied experience. If a section covers information you already know, feel free to skip to the next section.

- You **do not need** to be a computer expert to use this manual or the Software.
- The manual assumes you are familiar with Microsoft Windows 95, 98 or NT.

• Terms Used in this Manual

The following statements describe special terms that will be in this manual.

- The Software will be referred to as **DataWorker LE**.
- Both of the OM-550 and OM-5000 series Dataloggers will be referred as a Logger.
- **Workbook**, contains all of the worksheets and the uploaded data set saved with file extension (**.DDW**).
- **Worksheet**, the individual pages or sheets in the workbook file.
- **Data Set**, multiple data runs uploaded into the workbook file.
- **Data Run / Experiment**, the data uploaded from the Logger.
- **Thermocouple**, may be referred to as **T/C**
-  **Informs the user that the note includes important information.**
-  **Informs the user that the note includes a handy software tip.**

• Fonts Used in this Manual

This manual uses a special font to indicate terms or words that can be found directly on the PC display.

For Example: Select the *Open* command from the *File* menu to open a new workbook file. This font indicates the words *Open* and *File* are actually found in the PC display.

PC Hardware Requirements

Before the software can be used, a 486 or better computer that can run Windows 95, 98 or NT will be required to run the software.



If your current PC does not meet these requirements contact Customer support for an alternative software program.

Specific recommendations are as follows:

- CPU, RAM, Hardware:** Pentium processor
16 megabytes of RAM (minimum).
25 megabytes of free disk space (minimum).
- Operating System:** Windows 95, 98, or Windows NT.
- Disk Drive:** 3.5" high-density floppy disk drive or CD ROM drive.
- Mouse:** Windows compatible mouse, plugged into either a dedicated mouse or serial port.
- Serial Port:** At least one port in addition to the one used for the mouse.
- Video:** Color VGA or better graphics adapter and appropriate video monitor. (SVGA is highly recommended)
- Printer:** Color printer is recommended.



It is recommended that the software not be run on a computer that is using a software program that doubles the computer's RAM.

Software Installation

Before the Software is installed, read the README file (any standard text viewer can be used). The README contains the latest information on DataWorker LE software and installation instructions.

• Installing DataWorker LE on a PC with Windows 95, 98 or NT



All running applications must be closed before installing the software.

1. Insert disk 1 or the CD in the respective drive.
2. Select **Run** from the *Start up* menu.
3. Type the drive name, colon, backslash and *Setup* in the *Open* text box and click the **OK** command button.

For example, if disk 1 is inserted into the “A” drive type *A:\Setup*.

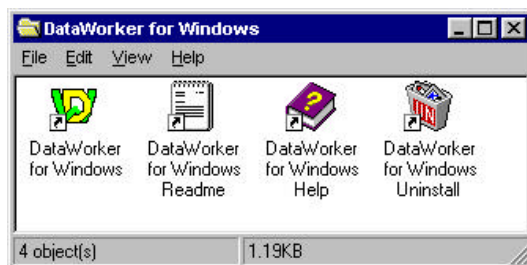


Run Dialog Box

4. Closely follow the setup instructions provided with the software

• Starting the Software

After the software is installed, start the software program by either double-clicking the DataWorker icon from the program group or select it from the DataWorker for Windows program sub-menu.



Program Group



Once the software installation is complete, it is important to start the software and configure the communication port (refer to section 3.1.8 Port Configuration)

1.0 A Look at DataWorker LE

This section presents an overview of a DataWorker LE workbook management window. When DataWorker LE is started, it will automatically load the previously saved workbook file. In the case when DataWorker LE is first installed and started it will load the sample workbook file supplied with the software (i.e. DWsample.ddw).

1.1 DataWorker LE Workbook Features

The workbook has several features as described in the following section:

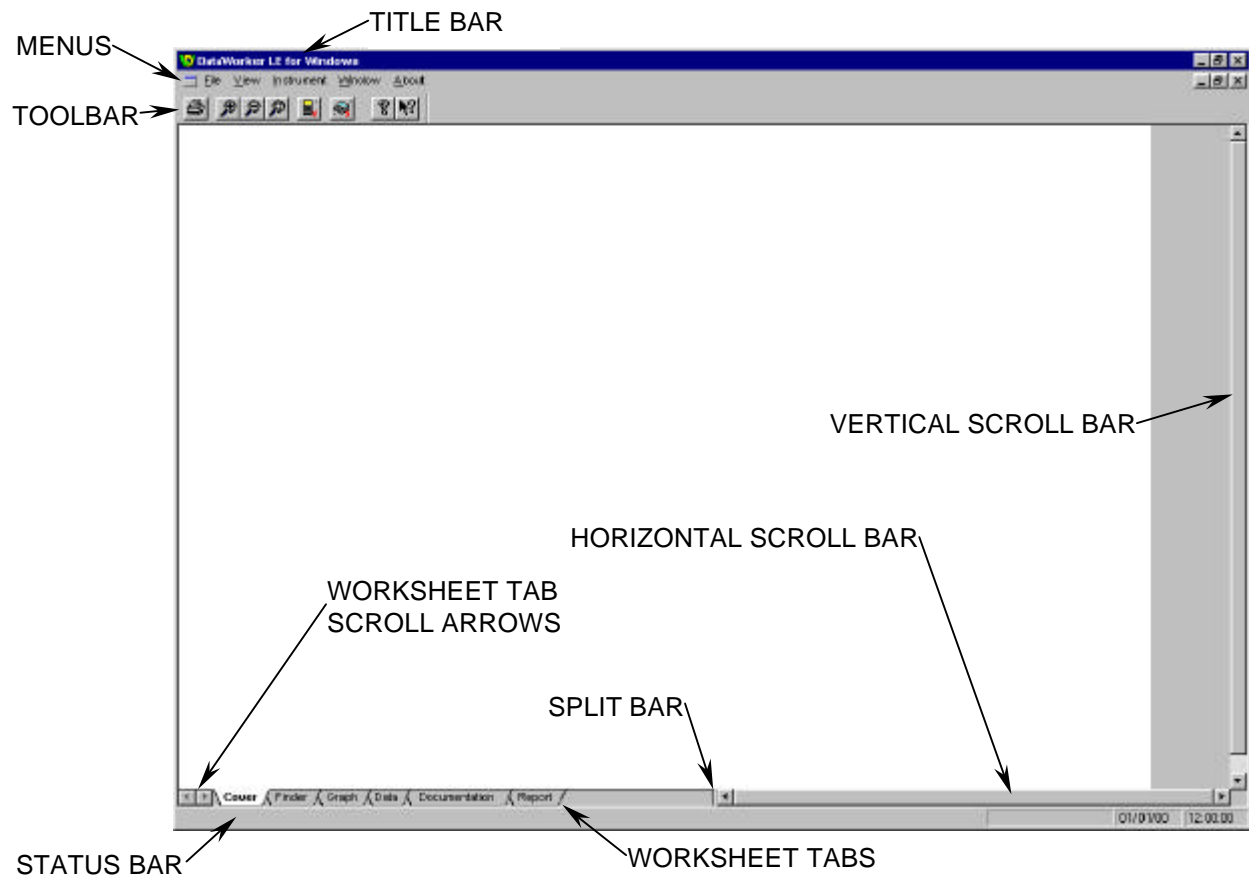


Figure 1-1: Workbook Features

- **Title Bar**: This bar contains the program name, version and the active workbook file name.
- **Menus**: These menus contain the commands and tools for each worksheet. Each worksheet may contain different commands to supply specific function for each worksheet. Individual worksheet menus are described in detail in their specified sections of this manual.
- **Toolbar**: The Toolbar has buttons to serve as shortcuts to the menu commands. Individual worksheet toolbar buttons are described in detail in their specified sections of this manual. Each worksheet may have different items on the toolbar because of the different commands offered by each worksheet.
- **Worksheet Tabs**: These tabs are used to gain access to each worksheet.
- **Worksheet Scroll Arrows**: These arrows are used to view other worksheet tabs when they are covered by the Horizontal scroll bar.
- **Split-bar**: This bar slides the Horizontal Scroll bar to the left or right so all or part of the worksheet tabs can be viewed.
- **Status Bar**: This bar on the bottom of the worksheet display shows the available Help information, current date and time.
- **Horizontal Scroll Bar**: This bar scrolls the worksheet display horizontally left and right.
- **Vertical Scroll Bar**: This bar scrolls the worksheet display vertically up and down.

1.2 Standard Worksheet functions

1.2.1 Worksheet tabs

There are six standard worksheets each having a tab for easy access. These tabs are located on the bottom left of the display.



Figure 1-2: Worksheet Tabs

1.2.2 Selecting Worksheets

To view a worksheet, use the mouse pointer to click on a worksheet tab. The worksheet tab will then become highlighted, and the worksheet will now be visible.



The keyboard does not allow access to the worksheets. The only way to select the worksheet is by using the mouse pointer.



Figure 1-3: Selecting a Worksheet

1.2.3 Split-bar

The Split-bar on the tab bar lets the user slide the Horizontal scroll bar to the left or right, so all of the worksheet tabs can be viewed. This feature is located where the on the left edge of the Horizontal scroll bar.

1.2.4 Worksheet Tab Scroll Arrows

Worksheet tabs may be hidden behind the horizontal scroll bar. To view them the user can either use the Tab Scroll Arrows located on the left of the worksheet tabs or use the Split-bar.

1.2.5 Scrollbars

The worksheets have both Horizontal and Vertical screen scroll bars so the non-visible areas of the worksheet can be scrolled into view. The Horizontal scroll bar is located in the lower right corner and can be scrolled left or right by pressing the left or right arrows located on each end of the scroll bar. The user may also scroll the display by sliding the center scroll bar left or right. The Vertical scroll bar located on the right side of the screen has the same features as the Horizontal scrollbar except it scrolls the worksheet display up and down.

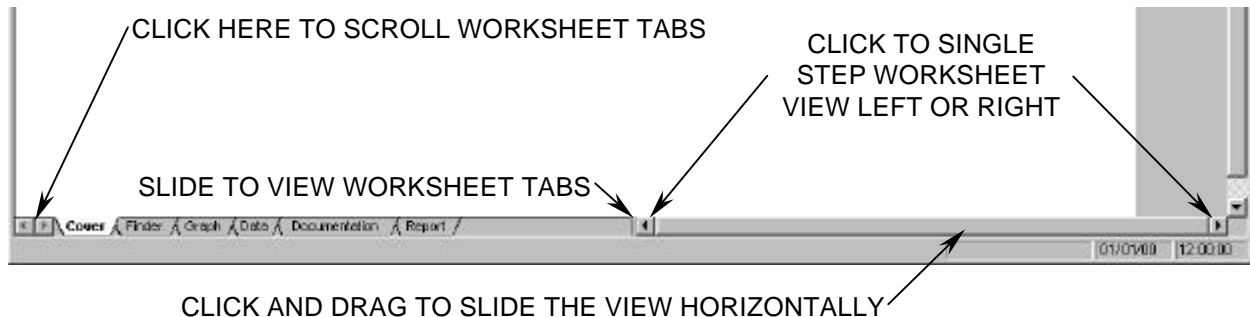


Figure 1-4: Worksheet Options

2.0 Worksheet Descriptions

The following sections offer brief explanations for the worksheet functions and how they benefit the user. Refer to section 3.0 *Menu and Tool Commands* for information on how to use all of the menu commands.

2.1 Cover Worksheet

The Cover worksheet is the introductory worksheet. This worksheet contains an introductory picture of an OM-550, OM-5100, and a text box for entering a company or workbook name.

Cover worksheet features:

- Menus and Toolbar
- Report Image
- Company Name Text Box



Figure 2-1: Welcome Worksheet

2.1.1 Cover Worksheet Menus and Toolbar

- Menus: File, View, Instrument, Window, and About.
- Toolbar Buttons: Print, Zoom In, Zoom Out, 100%, Read OM-550, Read OM-5000, About, and Context Help.



Figure 2-2: Cover Worksheet Menus and Toolbar Buttons



The dimmed menu commands are used in other worksheets.

2.1.2 Report Image

The image located on the Cover worksheet can be changed to insert a custom company logo or image that relates to the report.

To change an image:

1. Using the mouse pointer, click the image in the blue box and a list box will appear.



Figure 2-3: Changing an Image

2. Navigate to the folder where the desired image file is and highlight by clicking it once. The image files supported by the software are Dib- (.dib), Gif (.gif), Pcx (.pcx), Tiff (.tiff), Targa (.tga), Bitmap (.bmp) and Jpeg (.jpg).
3. Click the **OK** command button to insert, or **Cancel** to return to the Cover worksheet without making any changes.



Once an image (picture or logo) is selected, a copy of that image is added to the “Images” file folder located in the workbook directory. This allows the user to easily locate any image or logo.

2.1.3 Company/Report Name

The text box located on the bottom half of the Cover worksheet allows the user enter a company or report name.

To enter a name:

1. Using the mouse pointer, highlight the text in the text box.
2. Type a desired name and then hit the **[enter]** key to accept or **[esc]** to cancel.

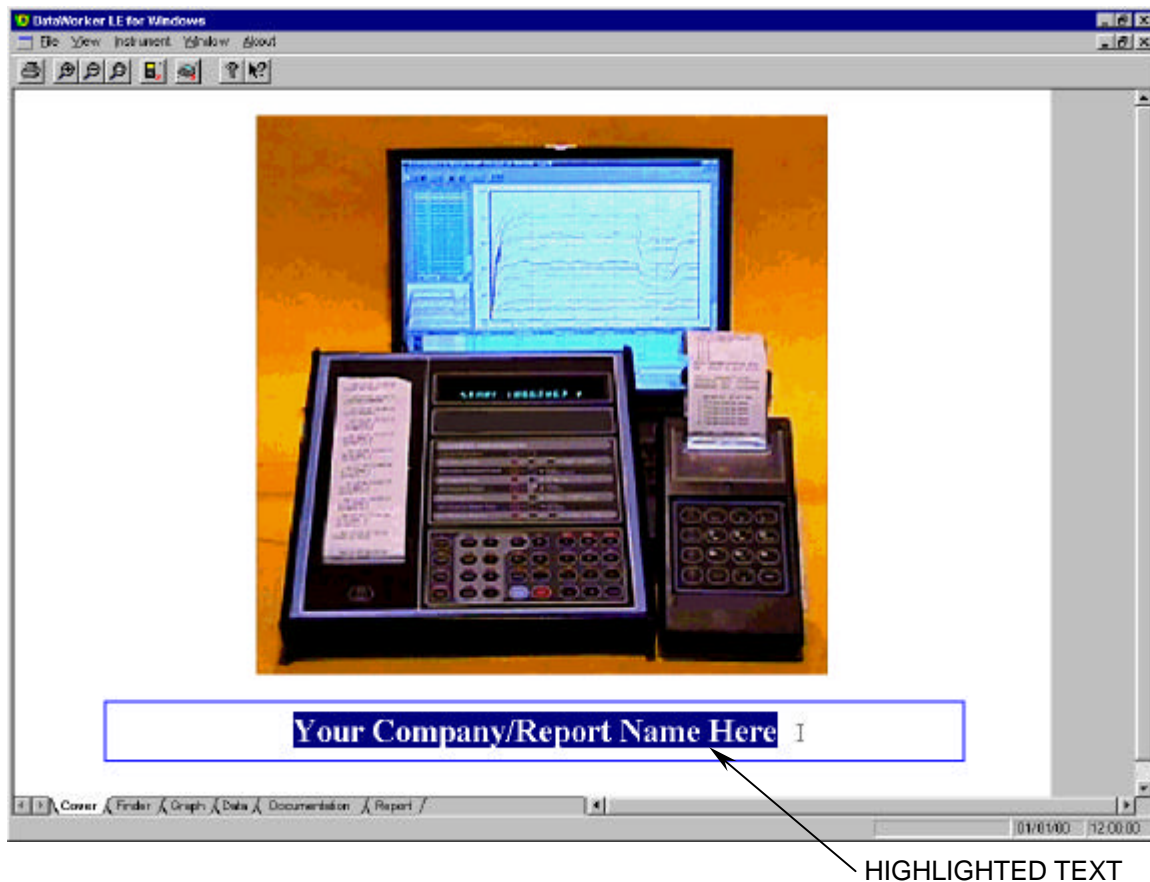
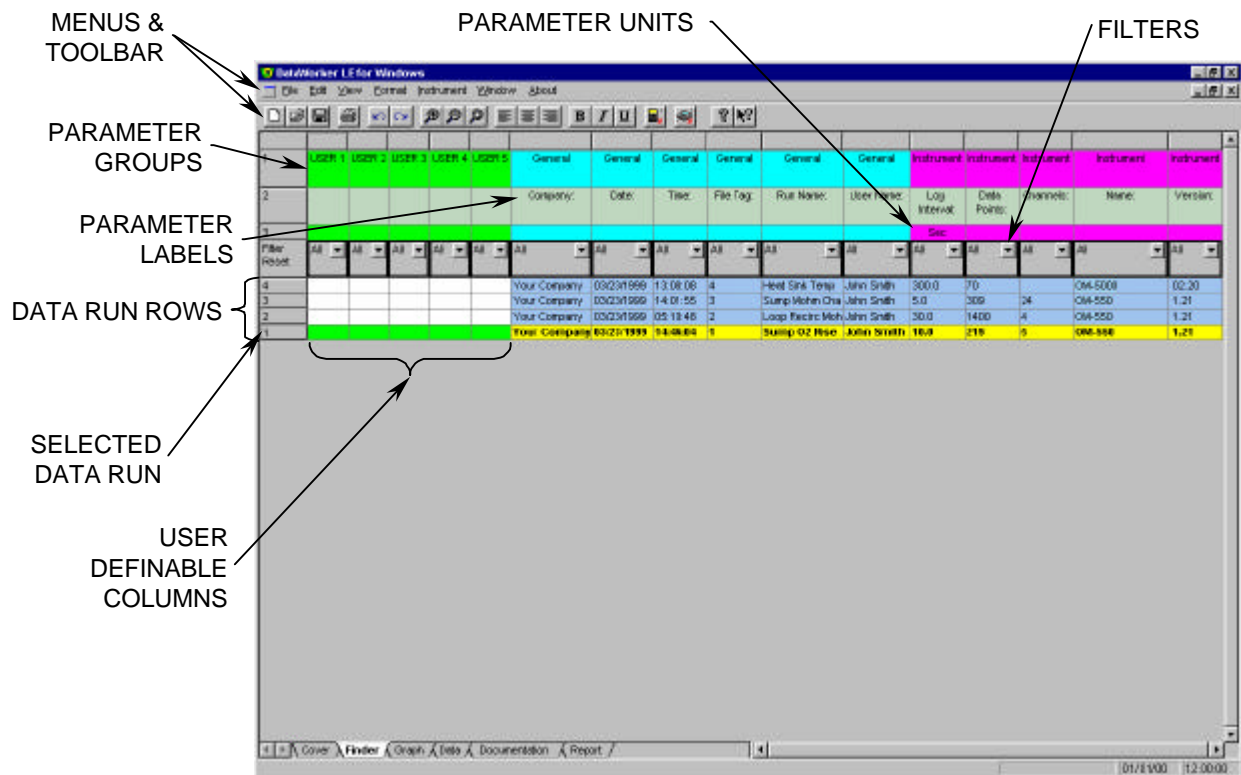


Figure 2-4: Entering a Company Name



The text in the Company name text box is automatically entered in the Company parameter on the Finder worksheet everytime data is uploaded into the program.



2.2.1 Finder Menus and Toolbar Buttons

- Menus: File, Edit, View, Format, Instrument, Window and About.
- Toolbar buttons: New, Open, Save, Print, Undo, Redo, Zoom In, Zoom Out, 100%, Align left, Center, Align right, Bold, Italic, Underline, OM-550, Read OM-5000, About and Context Help.

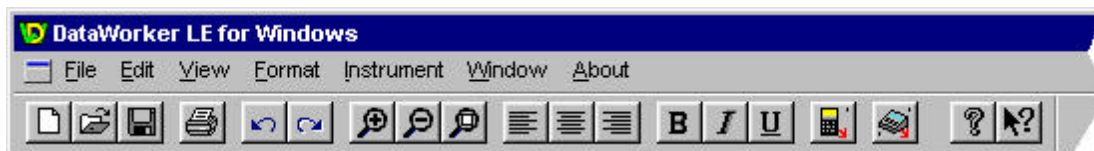


Figure 2-6: Finder Worksheet Menus and Toolbar Buttons



The dimmed menu commands are used in other worksheets.

2.2.2 Parameter Group Row

The Parameter Groups are the headers for a specific group of data parameters collected by the Logger. The Parameter Groups are color coded with the associated Parameter Labels so they will be easily identified together.

PARAMETER GROUP →

Instrument	Instrument	Instrument
Log Interval:	Data Points:	Channels:
Sec		
All	All	All
5.0	309	4
30.0	1400	5
10.0	219	5
300.0	26	24

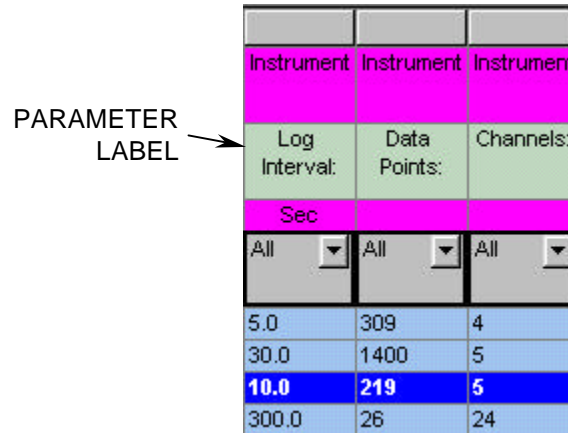
Figure 2-7: Parameter Group

The Parameter Groups are defined as the following:

- User Defined Parameter Group: These parameters have white cells indicating they can be used to enter text to help tag the row with unique information about that data run.
- General Parameter Group: This group contains file information associated with the data run such as date and time (of data run) and the data file tag.
- Instrument Parameter Group: This group contains the programmed information of the Instrument that was used to collect data.

2.2.3 Parameter Labels

The Parameter Labels are where all of the specific parameters in each group are named.



Instrument	Instrument	Instrument
Log Interval:	Data Points:	Channels:
Sec		
All	All	All
5.0	309	4
30.0	1400	5
10.0	219	5
300.0	26	24

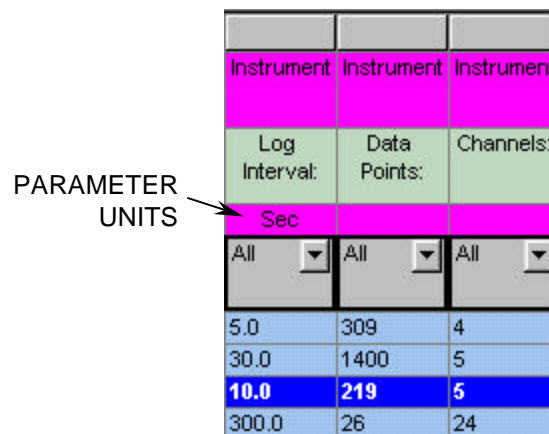
Figure 2-8: Parameter Label



Parameter Label column width can be adjusted to be larger or smaller by placing the mouse pointer over a line dividing the parameter columns and sliding it to the desired width.

2.2.4 Parameter Units

The Parameter Units are the units of measurement for that parameter. For example, in the Instrument Parameter group the Parameter Log Interval is in Seconds.



Instrument	Instrument	Instrument
Log Interval:	Data Points:	Channels:
Sec		
All	All	All
5.0	309	4
30.0	1400	5
10.0	219	5
300.0	26	24

Figure 2-9: Parameter Units

2.2.5 Data Run Rows

All of the data runs uploaded into the workbook file are listed on the Finder worksheet as individual rows. The first data run uploaded into the workbook file is in the bottom row and the most recent data run uploaded is in the top row.

When any data run row is selected, all of the cells in the entire row are highlighted in purple and blue. The purple cells indicate that the cells can be modified and the blue cells indicate the data cannot be modified.

When any individual data cell in a data run row is selected, all of the cells in the entire row are highlighted in green and yellow. The green cells indicate that the cells can be modified and the yellow cells indicate the data cannot be modified.

The data run rows can also be moved into any order desired. This is useful when the user wants to place similar data runs together.

To change the order of the data run:

1. Select the number cell of a data run row with the mouse pointer. The row will then become highlighted in purple and blue.
2. Drag the row and drop it to a desired location.

6				Log171			07/07/97	13:08:08
5				Log170			07/07/97	10:43:08
4				Log167			07/07/97	09:28:08
3				Log034			06/18/90	14:46:04
2				Log022			05/25/90	05:10:48
1				Log010			05/18/90	14:01:55

Figure 2-10: Drag and Drop Data Rows



Entire selected rows and columns can be copied and pasted into other spreadsheet applications by pressing keys (CTRL + C) to “copy” and then “pasted” by pressing keys (Ctrl + V).

2.2.6 Filters

There are Filters for each parameter label that filter specific data out of data runs so the user can easily compare similar data.



Filtering more than one column at a time acts as a Logical AND Function. All conditions of all set filters must be met for data row(s) to remain.

To use the Filter function:

1. Click the *Filter* button to reveal the unique data as populated in that column under that particular parameter label.
2. Select a desired data value to filter, or the two standard filters *All* and *Special*.

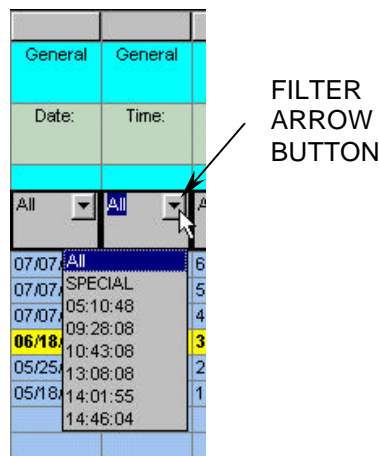


Figure 2-11: Filter Function

To use the All option:

1. Select *All* to reset the filter for that column and view all of the data run rows that meet the other column filters.

To use the Special option:

1. Select *Special* to select data run rows within a range of values. There are multiple options to select information to filter by clicking the appropriate relational operators option button (See Figure 2-12). The user can either select data from a populated list or type it in the text box on the top of the column.

=	equal to	>=	greater than or equal to
>	greater than	<=	less than or equal to
<	less than	<>	Not equal to

Figure 2-12: Relational Operators

2. Select a data filter by:

- Clicking the greater than relational operator option button beside the left data column.
- Click a Parameter value from the list or type it in the text box.
- Click the AND logical operator option button.
- Click the less than relational operator option button beside the right data column.
- Click a Parameter value from the list or type it in the text box.



The *Clear* command button can be selected at any time to clear the selections and the new values can be selected.

3. Click the **OK** command button to accept the selected data filters or *Cancel* to return to the worksheet without executing the filter request.

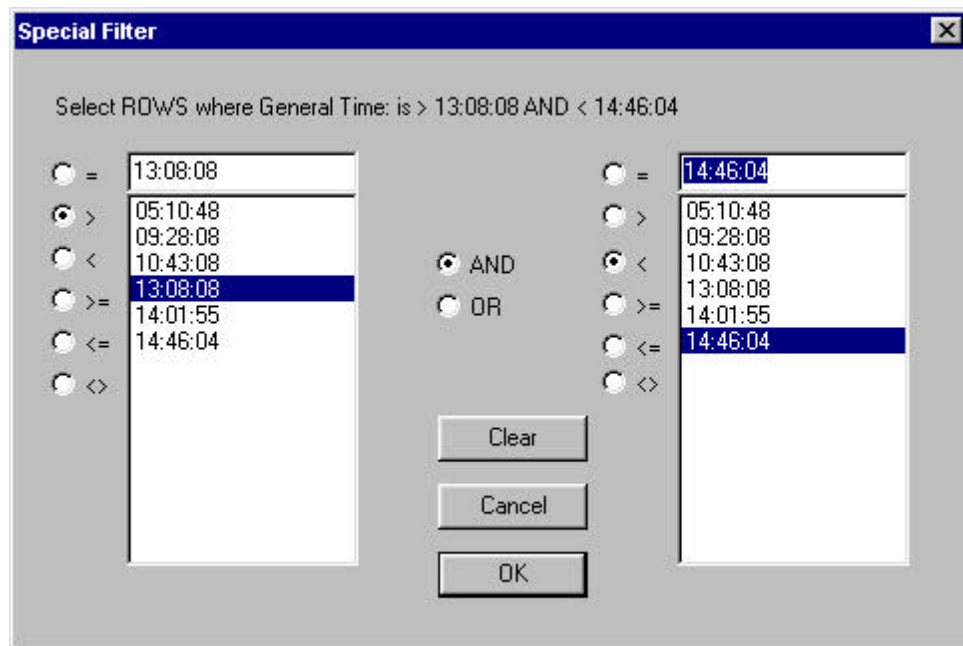


Figure 2-13: Special Filter Feature Dialog Box

In this example the data filtered would be all times between, but not including 13:08:08 and 14:46:04.



To reset all of the data set rows to restore the entire data set, click the Red *Filter Reset* button on the Finder worksheet.

2.3 Graph Worksheet

The Graph worksheet is where a selected Logger data run is represented graphically. The software allows the user to analyze the data and to compute statistics based on the data.

Graph worksheet features:

- Menus and Toolbar
- Mini Finder
- Magnify Map
- Channel Check Boxes
- Sensor Locations
- Status Bar
- Statistics Tabs
- Data Table
- Data Graph

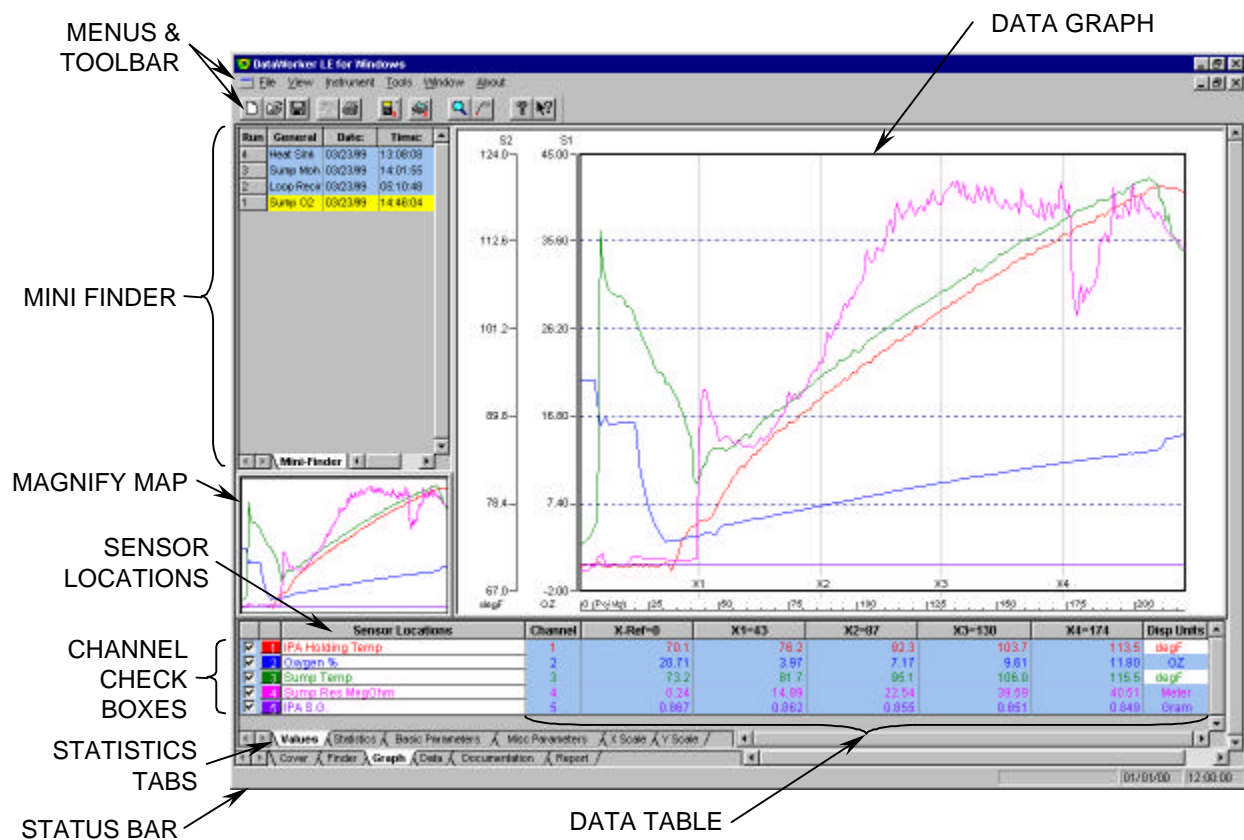


Figure 2-14: Profile Worksheet

2.3.1 Graph Worksheet Menus and Toolbar Buttons

- Menus: File, View, Instrument, Tools, Window, and About.
- Toolbar buttons: New, Open, Save, Copy, Print, Read OM-550, Read OM-5000, Magnify, Notes, About, and Context Help.



Figure 2-15: Graph Worksheet Menus and Toolbar Buttons



The dimmed menu commands are used in other worksheets.

2.3.2 Mini Finder

The Mini Finder is a small version of the Finder worksheet that allows the user to select other data runs to view without having to select them from the Finder worksheet.

Run	General	Date:	Time:	
4	Heat Sink	03/23/99	13:08:08	
3	Sump Moh	03/23/99	14:01:55	
2	Loop Recir	03/23/99	05:10:48	
1	Sump O2	03/23/99	14:46:04	

Mini-Finder

Figure 2-16

The Mini Finder includes three parameter columns to identify the data runs. The columns contain the data run Name, Date, and Time.

To select a data run, click the number of the data run in the left column. This will highlight the entire row and load the graph data for viewing.

2.3.3 Magnify Map

When using the Magnify Tool this area of the Graphic worksheet shows a small map of the entire graph and indicates the area currently magnified.

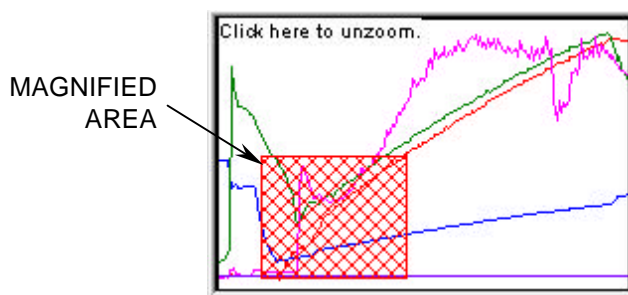


Figure 2-17: Magnify Map

2.3.4 Data Table

The Data Table includes all of the data collected by the Logger and separated into statistical format. The data is placed in rows and columns with descriptions to identify each one. The amount of columns the Data Table contains varies depending which statistic is active.

When there are more than six channels are used to collect data the vertical scroll bar located on the right of the Data Table can be used to scroll up or down to view the other channel data.

Another way to view more channels is to place the mouse arrow over the top edge of the Data Table and slide it up until all of the desired channels are in view.

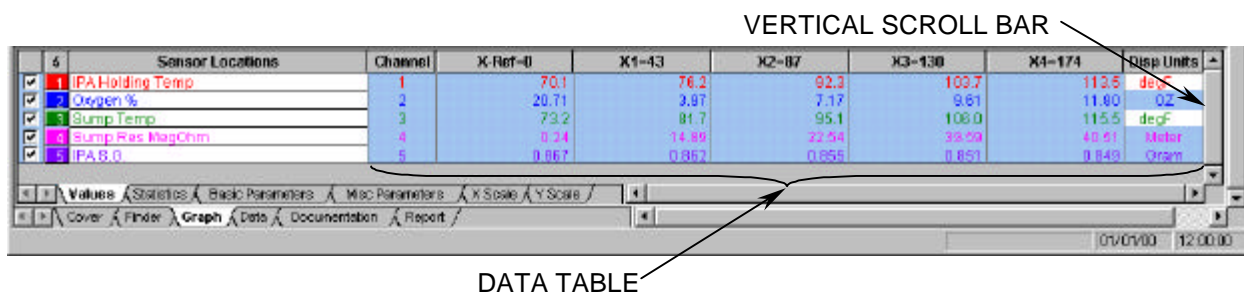


Figure 2-18: Data Table

The white cells in the Data Table are user configurable to allow the user to change a Sensor Location description at any time by clicking the desired cell and then typing in a new description for that particular channel. Some of the user configurable cells have drop down lists to allow the user to manually select a desired unit for a desired sensor channel.

2.3.5 Sensor Location Descriptions

The Data Table includes Sensor Location descriptions (labels) that have individual colors that indicate which Data Plot it represents. There is also a channel quantity number above the channel numbers that indicates how many channels are used in the data run.

SENSOR LOCATIONS DESCRIPTIONS

CHANNEL QUANTITY

	5	Sensor Locations
<input checked="" type="checkbox"/>	1	IPA Holding Temp
<input checked="" type="checkbox"/>	2	Oxygen %
<input checked="" type="checkbox"/>	3	Sump Temp
<input checked="" type="checkbox"/>	4	Sump Res MegOhm
<input checked="" type="checkbox"/>	5	IPA S.G.

Figure 2-19: Sensor Locations Descriptions

2.3.6 Channel Check Boxes

The Channel Check Boxes control whether the associated Data Plot is displayed on the Data Graph and whether the statistical results for that channel are included in the data table. To view or remove a Data Plot, click the channel check box beside a channel to turn it "ON" or "OFF"

CHANNEL CHECK BOXES

	5	Sensor Locations
<input checked="" type="checkbox"/>	1	IPA Holding Temp
<input checked="" type="checkbox"/>	2	Oxygen %
<input checked="" type="checkbox"/>	3	Sump Temp
<input checked="" type="checkbox"/>	4	Sump Res MegOhm
<input checked="" type="checkbox"/>	5	IPA S.G.

Figure 2-20: Channel Check Boxes

2.3.7 Status Bar

The Status Bar shows the available Help information, current PC date and time.



Figure 2-21: Status Bar Features

- **Help Information**

When the mouse pointer is placed over a Toolbar button this area of the Status bar will display the action that button performs.

- **Date and Time**

This area of the Status bar displays the current time and date of the PC.

2.3.8 Data Tabs

The Data Tabs allow the user to view the different statistical channel sensor information in the Data Table.

The Data Tabs are:

- Values
- Statistics
- Basic Parameters
- Misc. Parameters
- X Scale
- Y Scale

Only one Data tab can be active at a time and each is described in the following sections.



When either the **Values** or **Statistics** data tab is active and the **Magnify** tool is used to zoom in on a portion of the **Data Graph**, the **Data Table** displays the statistics for those values that are displayed in the zoomed area.

2.3.8.1 Values

When **Values** is the active data tab, the Data Table lists the data at the point where an X-Cursor intersects a Data Plot. The X-Cursor value can be changed at any time by moving the X-Cursor (refer to the descriptions in section 2.3.9.4 *X-Cursors*). When an X-Cursor is moved, the values in the Data Table are automatically updated.

S	Sensor Locations	Channel	X Ref=0	X1=43	X2=87	X3=130	X4=174	Disp Units
✓	IPA Holding Temp	1	70.1	76.2	82.3	103.7	113.5	degF
✓	Coogen %	2	20.71	3.97	7.17	9.61	11.80	OZ
✓	Bump Temp	3	73.2	81.7	95.1	108.0	115.5	degF
✓	Bump Res MegOhm	4	0.24	14.88	22.54	38.59	40.51	Watt
✓	IPA S.C.	5	0.057	0.082	0.055	0.051	0.045	Gram



Values in the Data Table reflect the selected unit type of the X and Y-axis units.

2.3.8.2 Statistics

When *Statistics* is the active data tab, the first four columns of the Data Table displays the Minimum and Maximum data or value point found for each Data Plot and the value of X in (time, distance, or point number) at which it occurs.

The last two columns of the Data Table display the Average (Mean) and Standard Deviation of the data values recorded for each channel.

S	Sensor Locations	Channel	Minimum	Minimum X	Maximum	Maximum X	Average	Std. Dev.	Disp Units
✓	IPA Holding Temp	1	88.8	33	120.0	219	96.1	16.9	degF
✓	Cogen %	2	3.00	31	20.73	1	9.81	2.92	°Z
✓	Bump Temp	3	73.2	0	120.9	205	102.5	12.0	degF
✓	Bump Res MegOhm	4	0.24	0	42.21	136	25.70	14.97	Meter
✓	IPAS G	5	0.043	199	0.037	29	0.055	0.007	Gram



If a portion of the Data Graph is magnified using the Magnify tool, the Data Table displays the Mean and Standard Deviation of the values displayed on the graph.

2.3.8.3 Basic Parameters

When *Basic Parameters* is the active data tab, it displays all of the Basic parameters and programmed data of the Logger.

S	Sensor Locations	Channel	Units	Type	m (Gain)	b (Offset)	Interval	Points	Version	Instrument	Dump Time	Dump Date
✓	IPA Holding Temp	1	degF	Type-K	0.000000	0.000000	10.0	219	1.21	DataMaster 5	3/04/10 PM	6/13/90
✓	Cogen %	2	°Z	Voltage	0.000000	0.000000	10.0	219	1.21	DataMaster 5	3/04/10 PM	6/13/90
✓	Bump Temp	3	degF	Type-K	0.000000	0.000000	10.0	219	1.21	DataMaster 5	3/04/10 PM	6/13/90
✓	Bump Res MegOhm	4	Meter	Voltage	0.000000	0.000000	10.0	219	1.21	DataMaster 5	3/04/10 PM	6/13/90
✓	IPAS G	5	Gram	Voltage	0.000000	0.000000	10.0	219	1.21	DataMaster 5	3/04/10 PM	6/13/90

2.3.8.4 Misc. Parameters

When *Misc. Parameters* is the active data tab, it displays special parameters and programmed data that are unique to the OM-550 and OM-5000.

S	Sensor Locations	Decimal	Reject Hz	Cal Mode	Math ChA	Math ChB	Math Op
✓	IPA Holding Temp	1	60	N	1	2	f
✓	Cogen %	2	60	N	1	2	f
✓	Bump Temp	1	60	N	1	2	f
✓	Bump Res MegOhm	2	60	N	1	2	f
✓	IPAS G	3	60	N	1	2	f

2.3.8.5 X Scale

When *X Scale* is the active data tab, it displays the current information for the X Scale.



S	Sensor Locations	Channel	X-Ref	Lag-On	Lag Points	Interval	Points	Last Time	Last Date	X Units
<input checked="" type="checkbox"/>	IPA Holding Temp	1	0	<input type="checkbox"/>	0	10.0	219	2:48:04 PM	6/18/90	Points
<input checked="" type="checkbox"/>	Oxygen %	2	0	<input type="checkbox"/>	0	10.0	219	2:46:04 PM	6/18/90	Points
<input checked="" type="checkbox"/>	Bump Temp	3	0	<input type="checkbox"/>	0	10.0	219	2:48:04 PM	6/18/90	Points
<input checked="" type="checkbox"/>	Bump Res MegOhm	4	0	<input type="checkbox"/>	0	10.0	219	2:46:04 PM	6/18/90	Points
<input checked="" type="checkbox"/>	IPA S.G.	5	0	<input type="checkbox"/>	0	10.0	219	2:46:04 PM	6/18/90	Points

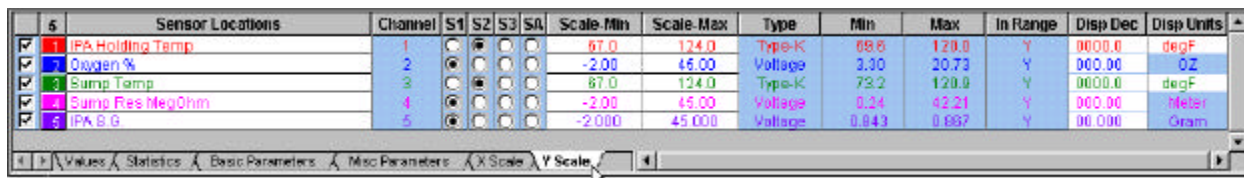
The X Scale tab also includes a column of check boxes to turn a Channel Lag “ON”. Once the Channel Lag is enabled the user can enter the Lag Points difference between one to another channel.

DataWorker LE can use channel lag information to align the Data Plots so the user can compare the results more easily during analysis.

The user can also select the type of scale for the X-Units using the X-Units column. The different X-Units are Point, Time Relative (Time measure from process origin), and Time Absolute (Time of day). Refer to section 2.3.9.5 *X-axis Units* for more information.

2.3.8.6 Y Scale

When *Y Scale* is the active data tab, it displays the current Y Scale information.



S	Sensor Locations	Channel	S1	S2	S3	SA	Scale Min	Scale Max	Type	Min	Max	In Range	Disp Dec	Disp Units
<input checked="" type="checkbox"/>	IPA Holding Temp	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	67.0	124.0	Type-K	69.8	129.8	Y	000.0	degF
<input checked="" type="checkbox"/>	Oxygen %	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-2.00	45.00	Voltage	3.30	20.73	Y	000.00	0Z
<input checked="" type="checkbox"/>	Bump Temp	3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	67.0	124.0	Type-K	73.2	120.9	Y	000.0	degF
<input checked="" type="checkbox"/>	Bump Res MegOhm	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-2.00	45.00	Voltage	0.34	42.21	Y	000.00	Meter
<input checked="" type="checkbox"/>	IPA S.G.	5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-2.000	45.000	Voltage	0.843	0.997	Y	00.000	Gram

DataWorker LE has a powerful Autoscaling feature that automatically scales the Data Graph so the data will always be visible and easy to work with. DataWorker LE will automatically select a range of values for both the X and Y-axes to ensure that all the data fits on the screen.

The Y Scale Tab also includes option buttons so the user can select three different Y-scales or have DataWorker LE software automatically determine a scale for individual channels.

To change the range of Y-values for each channel enter the minimum and maximum scale values in the Scale-min and Scale-max cells for each one.

2.3.9 The Data Graph

The Data Graph is a powerful yet simple display that shows a graph of data collected from one data run. The user can customize the Data Graph using the following features:

- X and Y-Axes and Labels
- Data Plots
- X-Ref(erence)
- X-Cursors
- X-axis Units

The features of the Data Graph are described in the sections that follow. Some of these features described are also controlled using the appropriate menu options. Refer to section *3.0 Menu and Tool Commands* for more information.

2.3.9.1 X and Y-Axes and Labels

The Y-axis (vertical) contains the scale of the measured or dependent variable (i.e. temperature, voltage, etc...). Lower values are at the bottom and higher values at the top.

When data is being analyzed, the Y-axis includes scale units labeled on the left side of the graph. These scales divide the vertical axis into equal parts and are automatically scaled to fit the current Y-axis size. The Logger collects temperature data in either Celsius or Fahrenheit but can be changed with the software program (refer to section *2.3.8.6 Y Scale* for more details). Voltage data can also be scaled a necessary.

The X-axis (horizontal) contains values of the independent variable—data points collected. The X-axis can be converted from data points or time (refer to section *2.3.8.5 X Scale* for more details).

2.3.9.2 Data Plots

The Data Plots in the Data Graph represent the data for each of the channels on the Logger. Each channel is represented by a different color and corresponds to the color of its description in the Data Table shown in *Figure 2-22*.

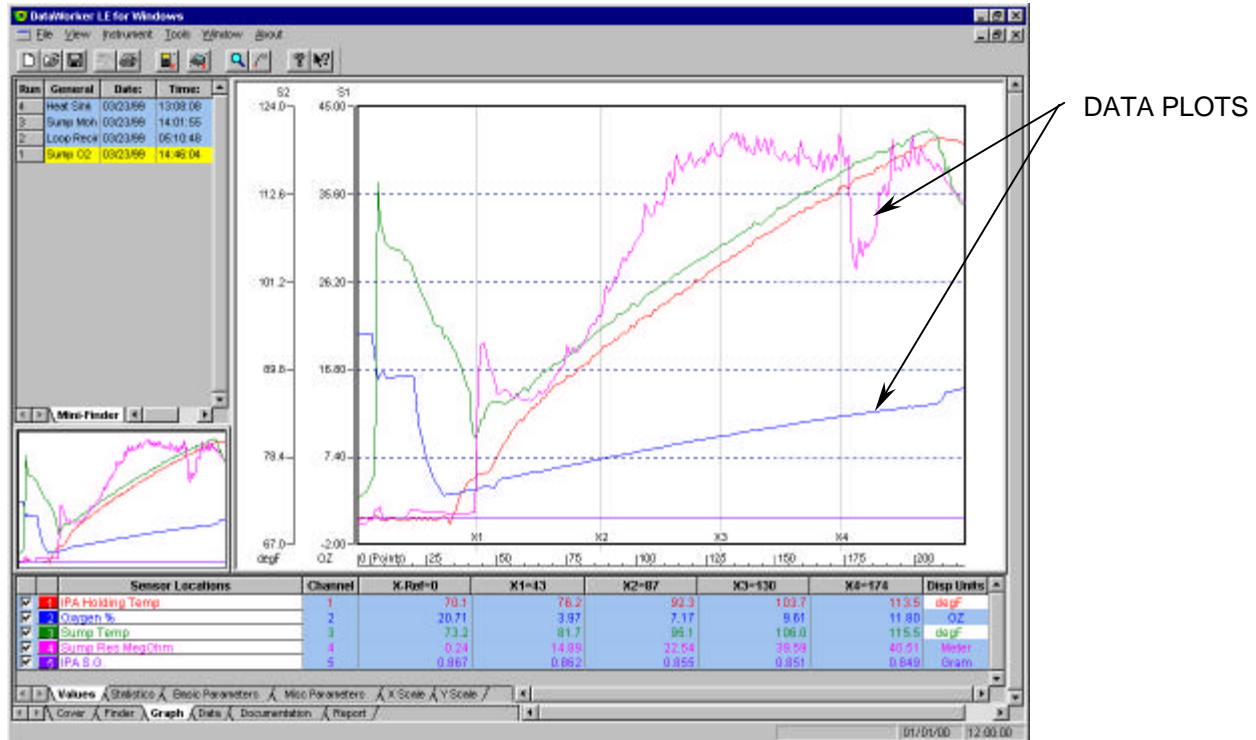


Figure 2-22: Data Plots

A Data Plot in the Data Graph can be suppressed or restored at any time by clicking the check box with the corresponding channel description in the Data Table. This allows the user to view any combination of the Data Plots or individually.



When two or more Data Plot points overlap, they will overwrite each other in the same order they appear in the Sensor Locations descriptions. For example, if a channel 1 Data Plot point and a channel 3 point have the same values, only the channel 3 Data Plot point appears.

2.3.9.3 X-Ref(erence) Line

The X-Ref is a dashed vertical line at the left edge of the Data Graph, as shown in *Figure 2-23*. The X-Ref line can be moved to the left or right to align the process with the data.

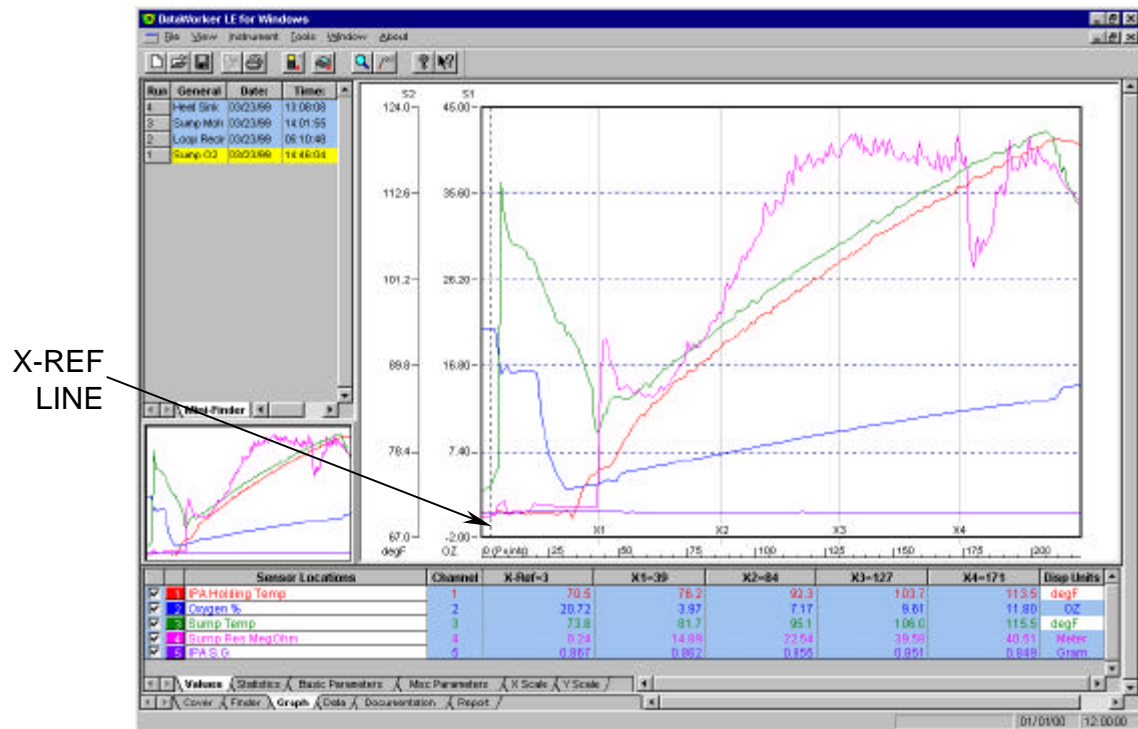


Figure 2-23: Process Origin

The X Ref column in the Data Table indicates the true position of the X-Ref line while it is being moved. After the mouse button is released, the zero point of the X Scale moves to the X Ref line.



When the Statistics Data tab is active and the user moves the X Ref line, the min. and max X data will automatically update to reflect the new position.

To move the X-Ref line:

1. Select the X-Ref line by positioning the mouse pointer anywhere on the dashed line.
2. Press and hold the left mouse button.
3. Move the line by dragging it left or right.
4. Release the mouse button when the X-Ref line is at the desired location.

2.3.9.4 X-Cursors

The Data Graph has four X-cursors that indicate the Y-values at the intersection of a Data Plot with each X-Cursor. These values are displayed in the Data Table in four data columns labeled *X1*, *X2*, *X3*, and *X4*, representing X-Cursor 1 through X-Cursor 4.

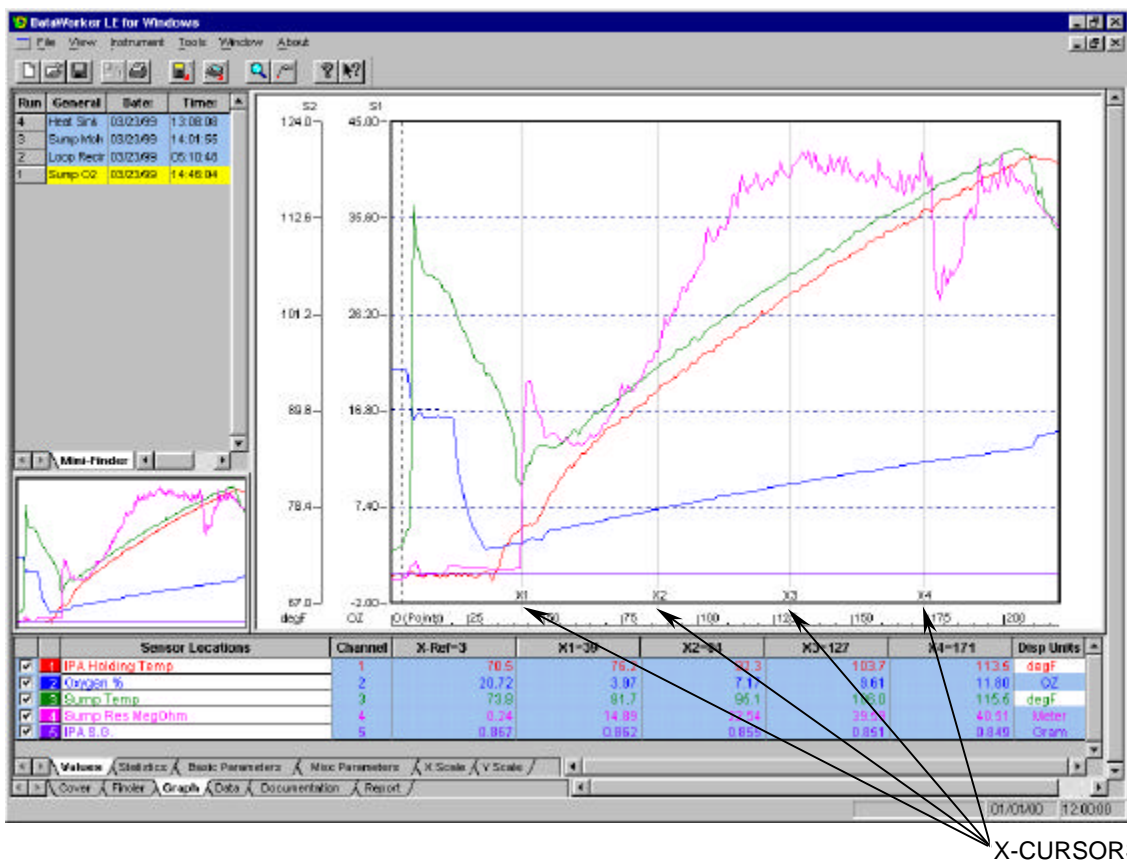


Figure 2-24: X-Cursors

When an X-Cursor is moved to a new position, it automatically moves to the closest real X-value. Notice on highly magnified graphs that the cursor jumps from point to point. In an extreme case, if the graph is so highly magnified that there are no real X-values to move to, the X-Cursors cannot be moved at all.

To move an X-Cursor:

1. Position the mouse pointer over an X-Cursor vertical line then press and hold the left mouse button and drag it left or right releasing the mouse button when the X-Cursor is at the desired location.



The position of an X-Cursor controls the values displayed in the Data Table. When an X-Cursor is moved, values in the Data Table are automatically updated.

2.3.9.5 X-axis Units

The user can select three different types of X scales for the X-axis. The scales are Point, Time Relative (time measure from process origin), and Time Absolute (time of day). To select a scale go to the X Scale Statistics tab and click an X-Units cell. Select the drop down list arrow and the X-scale list will appear. Select a desired scale and the X Scale will then automatically change to the new scale.

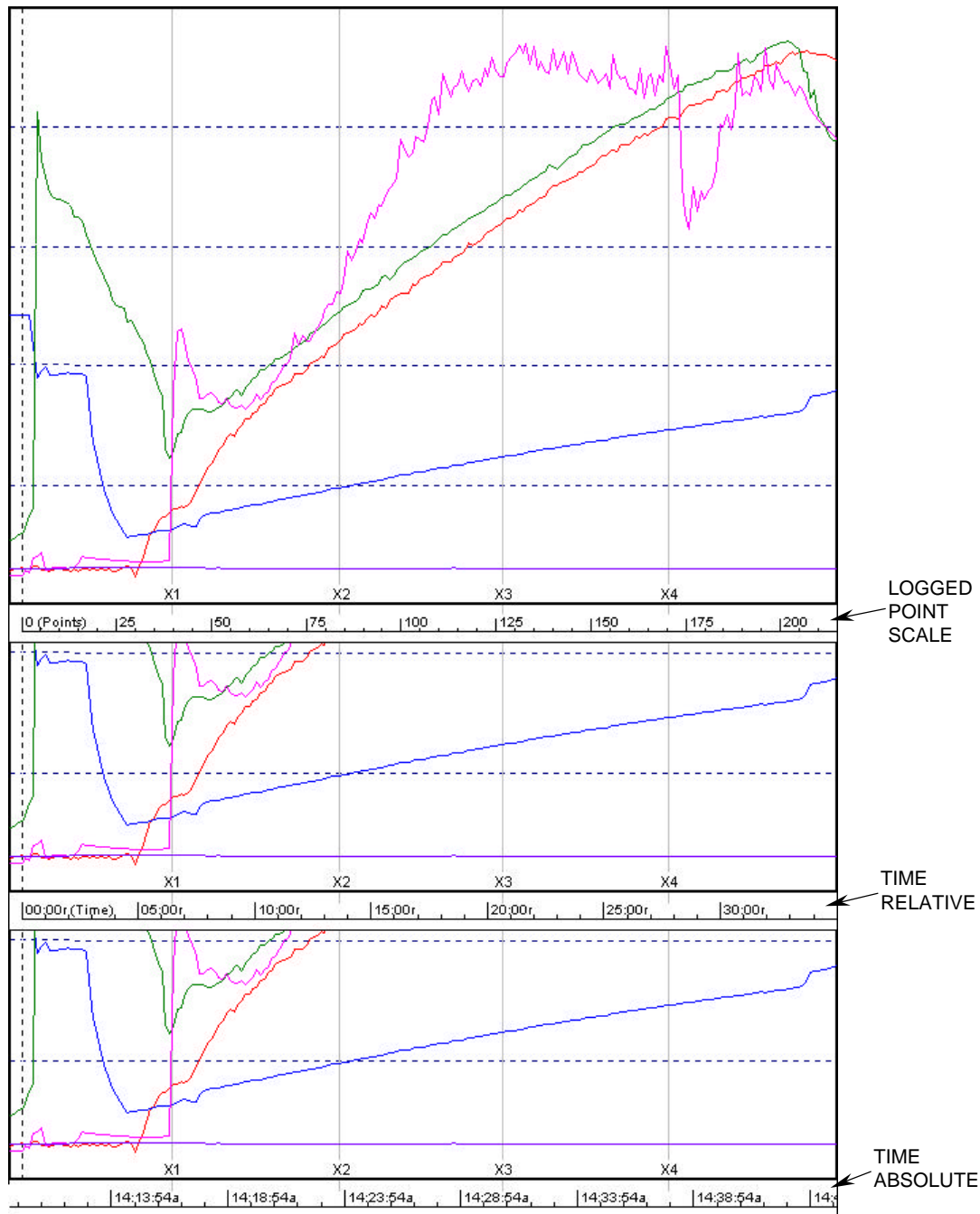


Figure 2-25: Scale Types

2.4 Data Worksheet

The Data worksheet contains the numerical format of the data collected by the Logger. Each channel has an individual column starting from the left edge of the worksheet. The column header rows include the Instrument and Basic Parameters and the remaining rows are the individual data points for each channel.

Data worksheet features:

- Menus and Toolbar
- Parameter Section
- Data Points

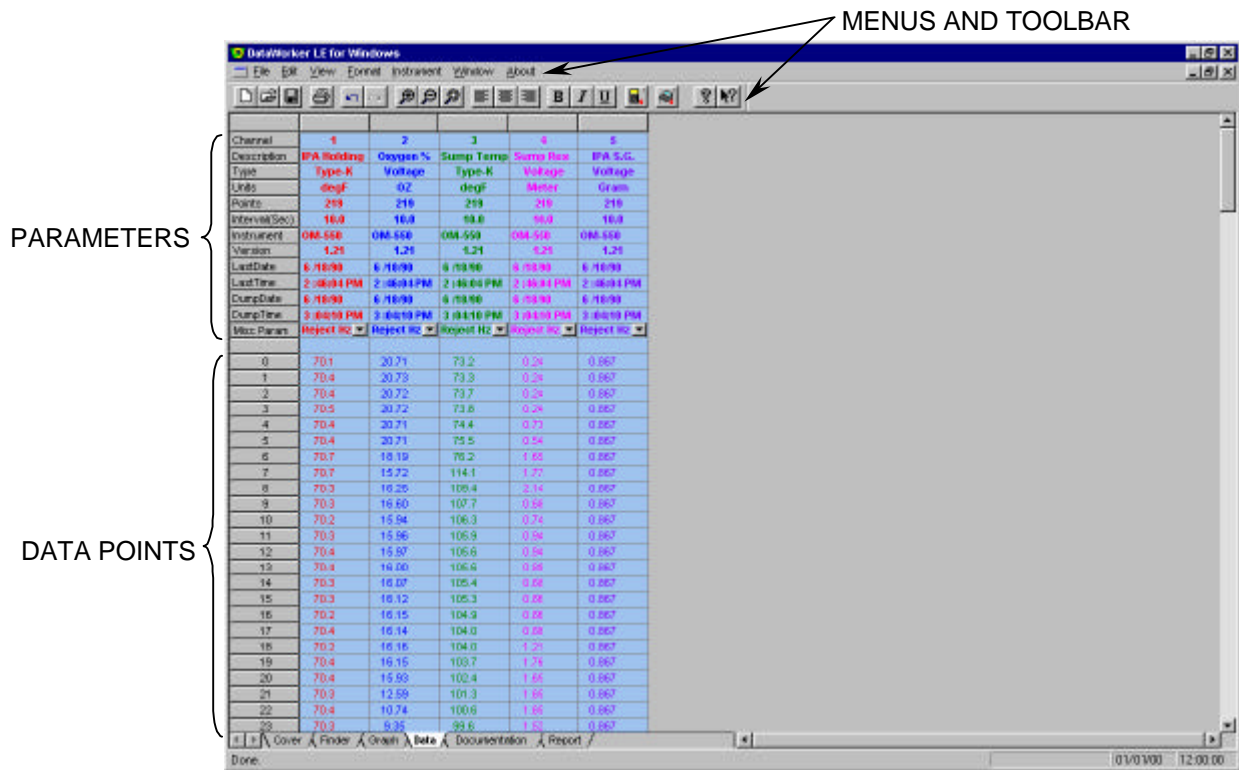


Figure 2-26: Data Worksheet

2.4.1 Data Worksheet Menus and Toolbar Buttons

- Menus: File, Edit, View, Format, Instrument, Window, and About.
- Toolbar buttons: New, Open, Save, Print, Undo, Redo, Zoom In, Zoom Out, 100%, Left Align, Center, Right Align, Bold, Italic, Underline, Read OM-550 Read OM-5000, About, and Context Help.



Figure 2-27: Data Worksheet Menus and Toolbar Buttons



The dimmed menu commands are used in other worksheets.

2.4.2 Individual Parameters

The Individual Parameters include the individual Instrument, Basic, and Misc. Parameters for each channel.

When the user scrolls the display down to view data points the Instrument parameters always remain at the top of the columns as reference headers.

The Basic parameters are the same parameters as viewed on the Basic Parameter Statistics Tab and these are the constant parameters that the OM-550 and OM-5000 have in common.

The last row in the parameter section includes a drop down list of parameters that are unique to the OM-550 and OM-5000. To view click the drop down list arrow in the appropriate cell and the drop down list will appear.

Channel	1	2	3	4	5
Description	IPA Holding	Oxygen %	Sump Temp	Sump Res	IPA S.G.
Type	Type-K	Voltage	Type-K	Voltage	Voltage
Units	degF	OZ	degF	Meter	Gram
Points	219	219	219	219	219
Interval(Sec)	10.0	10.0	10.0	10.0	10.0
Instrument	OM-550	OM-550	OM-550	OM-550	OM-550
Version	1.21	1.21	1.21	1.21	1.21
LastDate	6 /18/90	6 /18/90	6 /18/90	6 /18/90	6 /18/90
LastTime	2 :46:04 PM	2 :46:04 PM	2 :46:04 PM	2 :46:04 PM	2 :46:04 PM
DumpDate	6 /18/90	6 /18/90	6 /18/90	6 /18/90	6 /18/90
DumpTime	3 :04:10 PM	3 :04:10 PM	3 :04:10 PM	3 :04:10 PM	3 :04:10 PM
Misc Param	Reject Hz	Reject Hz	Reject Hz	Reject Hz	Reject Hz
	Parameter	Value			
0	Decimal	1	73.2	0.24	0.867
1	Reject Hz	60	73.3	0.24	0.867
2	Cal Mode	N	73.7	0.24	0.867
3	Math ChA	1	73.8	0.24	0.867
4	Math ChB	2	74.4	0.73	0.867
5	Math Op	/	75.5	0.54	0.867

Figure 2-28: Parameter Section

2.4.3 Individual Data Points

The individual data points collected during the data run are listed in individual cells for analysis.



This type of spreadsheet format makes it easy to copy and paste the data into other spreadsheet programs.

"HEADER" ROWS	Channel	1	2	3	4	5
	Description	IPA Holding	Oxygen %	Sump Temp	Sump Res	IPA S.G.
	Type	Type-K	Voltage	Type-K	Voltage	Voltage
	Units	degF	OZ	degF	Meter	Gram
	35	71.6	3.47	92.0	1.35	0.863
	36	72.5	3.50	91.0	1.35	0.861
	37	73.8	3.57	90.2	1.35	0.863
	38	74.1	3.69	88.9	1.35	0.861
	39	74.9	3.77	87.8	1.35	0.863
	40	75.3	3.80	86.8	1.35	0.861
	41	75.4	3.82	81.8	1.46	0.862
X-1 CURSOR	**X-1*>	75.7	3.85	81.0	1.46	0.862
	43	76.2	3.97	81.7	14.89	0.862
	44	76.2	4.09	83.3	19.54	0.862
	45	76.4	4.23	83.4	19.73	0.862
	46	76.3	4.34	84.6	18.80	0.861
	47	76.5	4.24	85.3	17.10	0.865
	48	77.0	4.14	85.7	16.50	0.865
	49	77.9	4.16	85.7	15.64	0.864

Figure 2-29: X-Cursor Row

The X-Ref line and X-cursors also appear in the Data worksheet rows. The X-Ref is green highlighted row of cells and the X-cursors are yellow highlighted cells and labeled accordingly. These rows move when the user moves them on the Graph worksheet. Refer to section 2.3.9.4 *X-Cursors* for more information.

Another feature of the Data worksheet is when the user magnifies an area on the Data Graph the magnified data points are highlighted on the Data worksheet with shaded light green cells.

2.5 Documentation Worksheet

The Documentation worksheet is where notes or messages can be saved. For example an engineer can keep a production journal by typing a message in a cell explaining specific instructions on how the experiment was setup on a particular day.

This worksheet is also helpful when conclusions have been drawn from the data and its analysis may be documented here for later inclusion in a final report.

Documentation worksheet features:

- Menus and Toolbar
- Note Cells

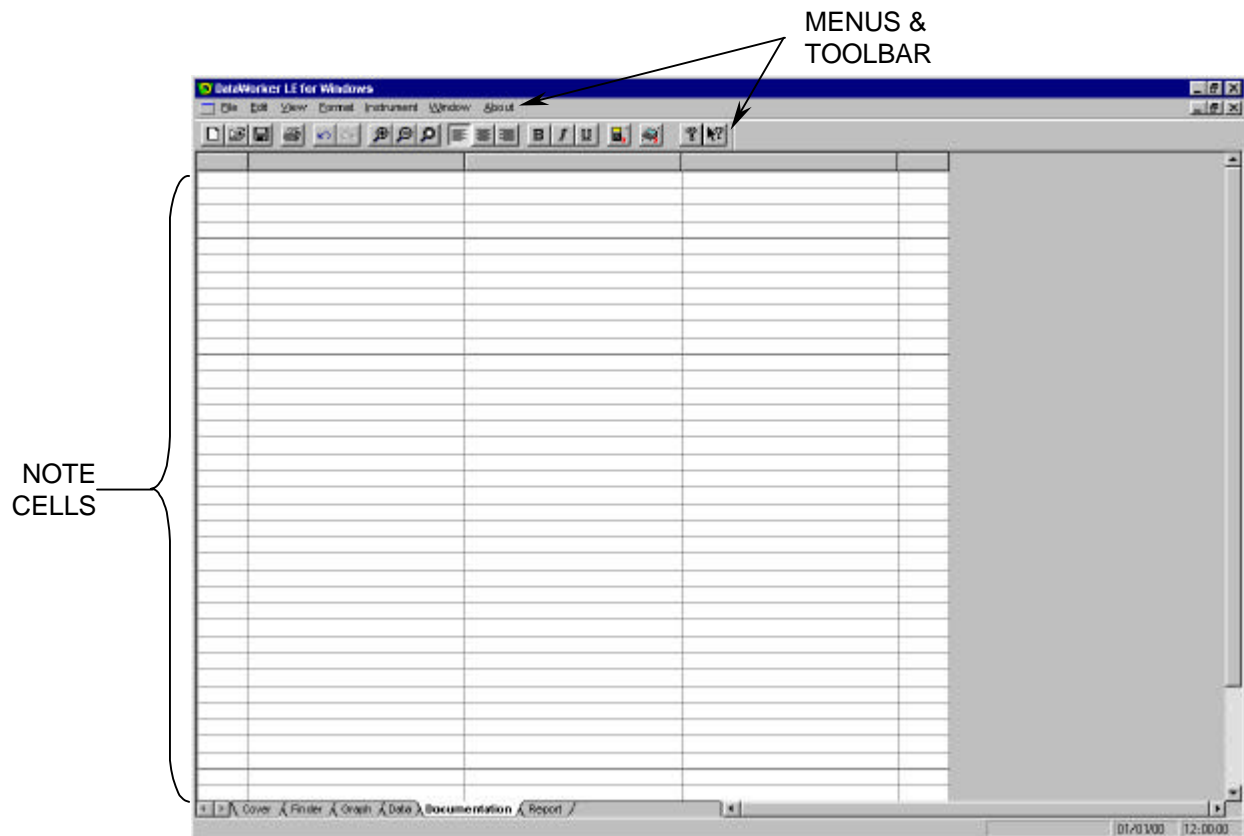


Figure 2-30: Documentation Worksheet

2.5.1 Documentation Worksheet Menus and Toolbar Buttons

- Menus: File, Edit, View, Format, Instrument, Window, and About.
- Toolbar buttons: New, Open, Save, Print, Undo, Redo, Zoom In, Zoom Out, 100%, Left Align, Center, Right Align, Bold, Italic, Underline, Read OM-550, Read OM-5000, About, and Context Help.



Figure 2-31: Data Worksheet Menus and Toolbar Buttons



The dimmed menu commands are used in other worksheets.

2.5.2 Note Cells

The Note Cells are similar to a standard spreadsheet program and can be resized by sliding the cell borders to show an entire note or message. The text in these cells can also be formatted using the commands on the Format menu.

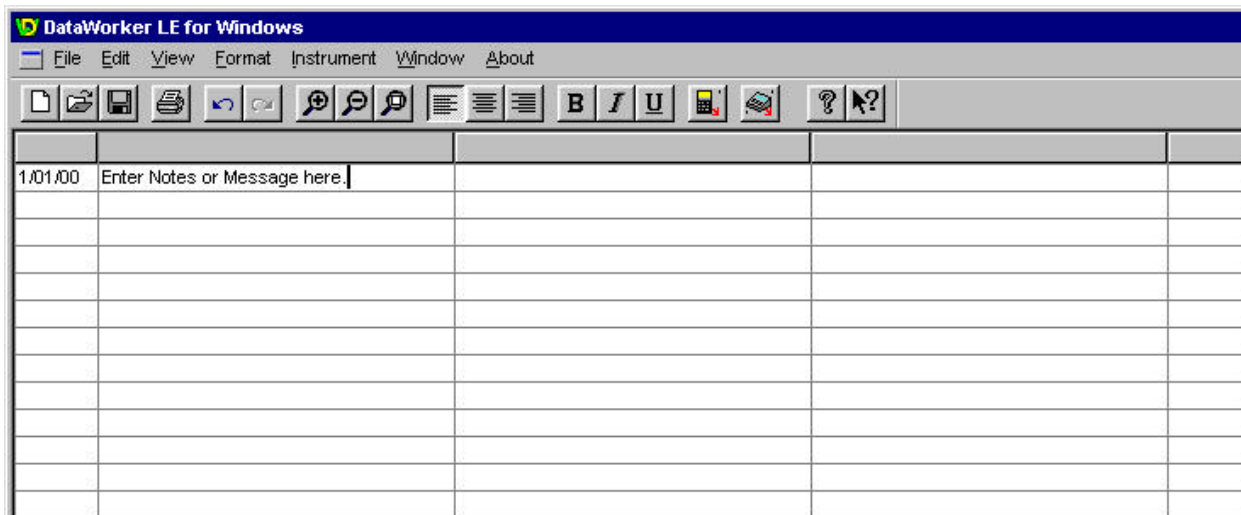


Figure 2-32: Example Note

2.6 Report Worksheet

The Report worksheet allows the user to select various combinations of worksheets to be printed using the Print Report command. This is a useful tool to print multiple worksheets of the Workbook file in a report format.

Report worksheet features:

- Menus and Toolbar
- Report Configuration

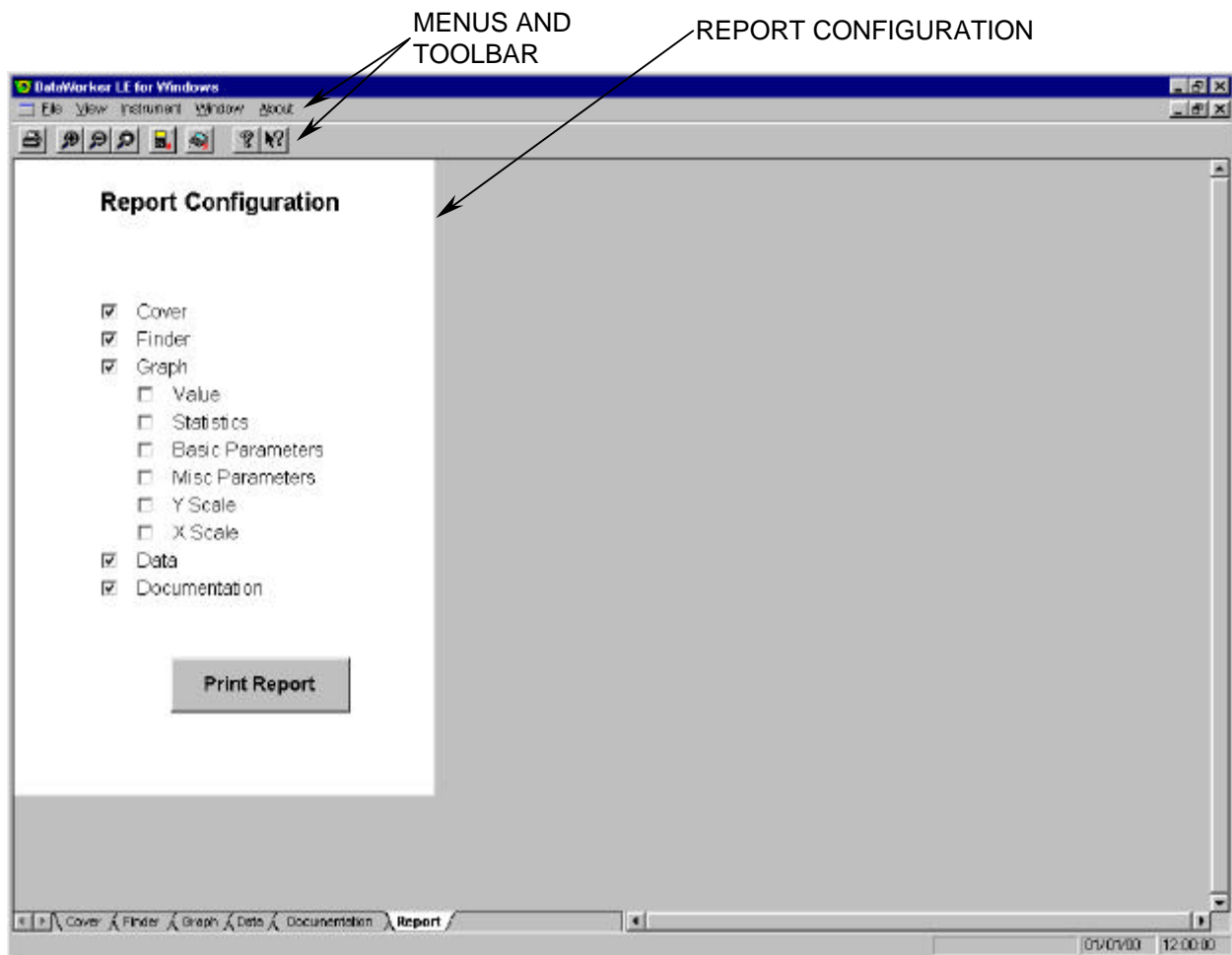


Figure 2-33: Report Worksheet

2.6.1 Report Worksheet Menus and Toolbar

- Menus: File, View, Instrument, Window, and About.
- Toolbar Buttons: Print, Zoom In, Zoom Out, 100%, Read OM-550, Read OM-5000, About, and Context Help.



Figure 2-34: Report Worksheet Menus and Toolbar Buttons



The dimmed menu commands are used in other worksheets.

2.6.2 Report Configuration

This area of the worksheet is where the individual worksheets and Statistics tabs are selected for report printing.

To setup and print a report:

1. Click the check box(es) to enable the desired worksheet(s) and Statistics tab(s) to be printed.
2. Click the ***Print Report*** command button to accept the selection(s) and initiate printing.

The Print Report command can also be selected from the ***File*** menu on all of the worksheets.

3.0 Menu and Tool Commands

This section explains how to use all of the Menu and Toolbar button commands. Each of the following sections will list all of the commands specific to each of the menus.



The dimmed menu commands are used in other worksheets.

3.1 File Menu

Commands in the File menu are designed to help send instructions to the printer and configure workbooks.

3.1.1 New

Select the *New* command from the *File* menu to start a new workbook. A message box will appear allowing the user to select a file folder to save the new workbook. The *New* command will automatically open a new workbook with default values and settings. The program is now prepared to read data from the Logger.

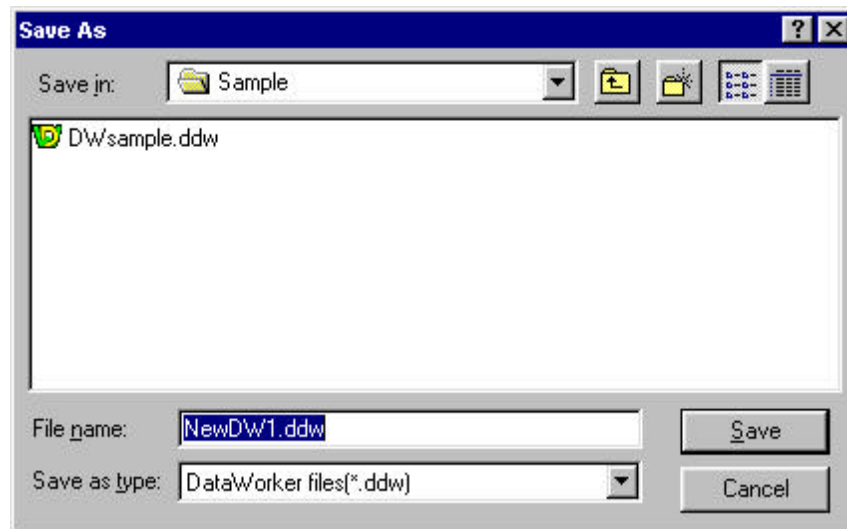


Figure 3-1: New List Box

The New command can be accessed on the Toolbars of the Finder, Graph, Data, and Documentation worksheets. This command can also be used by pressing **Ctrl + N**.

- **New Button:**

3.1.2 Open

The Open command allows the user to open an existing workbook file.

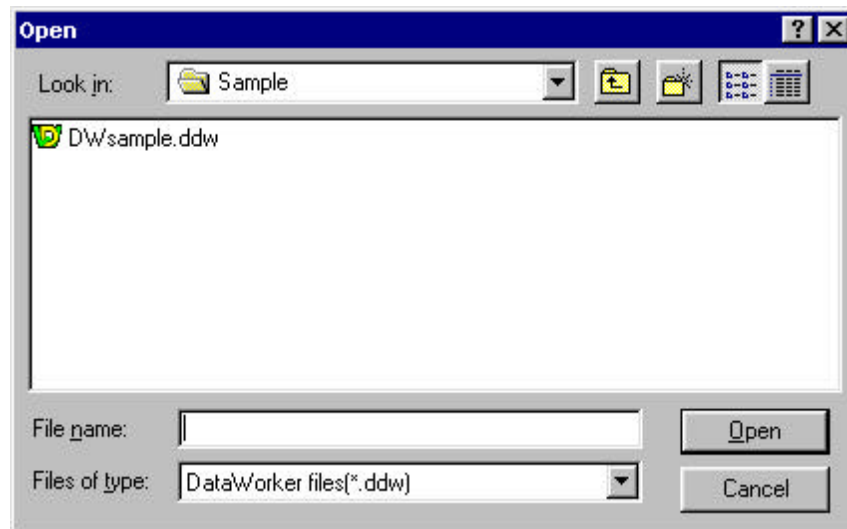


Figure 3-2: Open List Box

To open a workbook file:

1. Select the *Open* command from the *File* menu. A list box of workbook files with an extension of (.DDW) will appear.
2. Highlight the desired workbook file to open by clicking it once.
3. Click the *OK* command button to open, or *Cancel* to return to the current worksheet.



More than one workbook file can be open at a time and can be viewed by using the commands on the Window File menu (refer to section 3.7 Window Menu).

The Open command can be accessed on the Finder, Graph, Data, and Documentation worksheet Toolbars. This command can also be used by pressing *Ctrl + O*.

• **Open Button:** 

3.1.3 Close

Select the *Close* command from the *File* menu will close the current workbook. If there is second workbook open, closing a workbook will return to the previous workbook.

3.1.4 Import File(s)

The Import File(s) command imports existing OM-550/5000 (.BIN) files into the Finder worksheet. Once the data is imported it can then be saved in the new format as described under the *Save* and *Save As* menu commands.

To import OM-550/5000 (.bin) data to DataWorker LE:

1. Select the **Import File(s)** command from the **File** menu and the Import File(s) list box will appear.

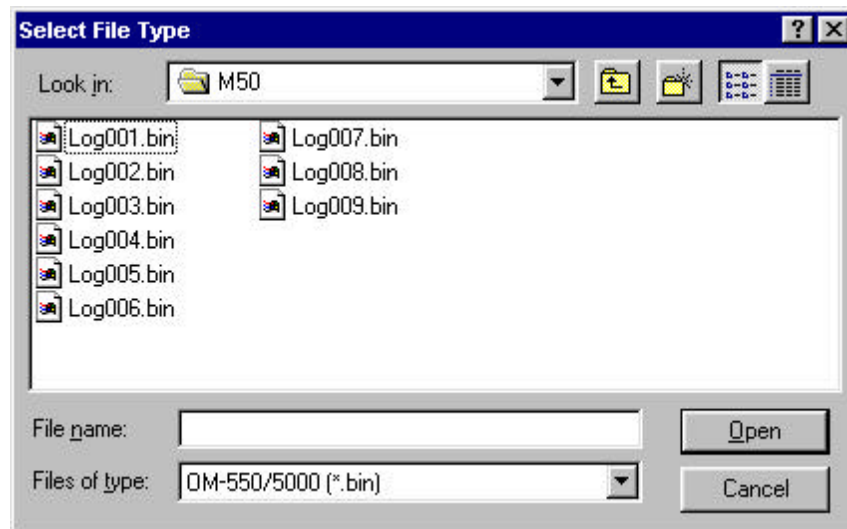


Figure 3-3: Import List Box

2. Select the file folder of the file(s) to import.
3. Select the file(s) to import by clicking it.
4. Click the **Open** command button.



The path and file name of the file to be imported can also be typed in the *File name* text box.

3.1.5 Save

Select the *Save* command from the *File* menu to save the current workbook file after changes have been made. When the user saves the file, all of the current data sets and options in the workbook are saved.

The Save command can be accessed on the Finder, Graph, Data, and Documentation worksheet Toolbars. This command can also be used by pressing *Ctrl + S*.

- **Save Button:** 

3.1.6 Save As

Select the *Save As* command from the *File* menu to save the current workbook with a new file name. When the user saves the file, the current appearance of the workbook and the options that have been set are saved.

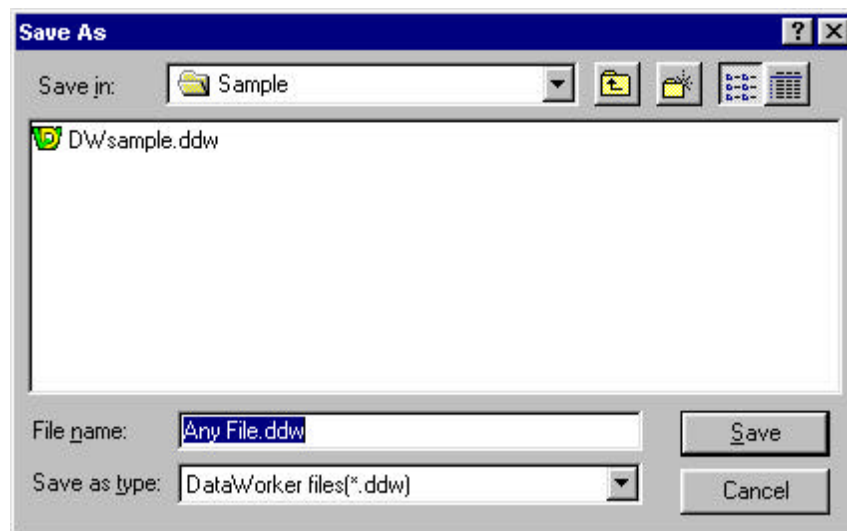


Figure 3-4: Save As List Box

3.1.7 Backup Database

Select the *Backup Database* command from the *File* menu to save the current workbook as a backup file with a file extension of **(.BAK)**.

This command is used to protect all of the collected data in case the file may accidentally get deleted or corrupted. When the user saves the file, the current appearance of the workbook and the options that have been set with menu commands are saved.

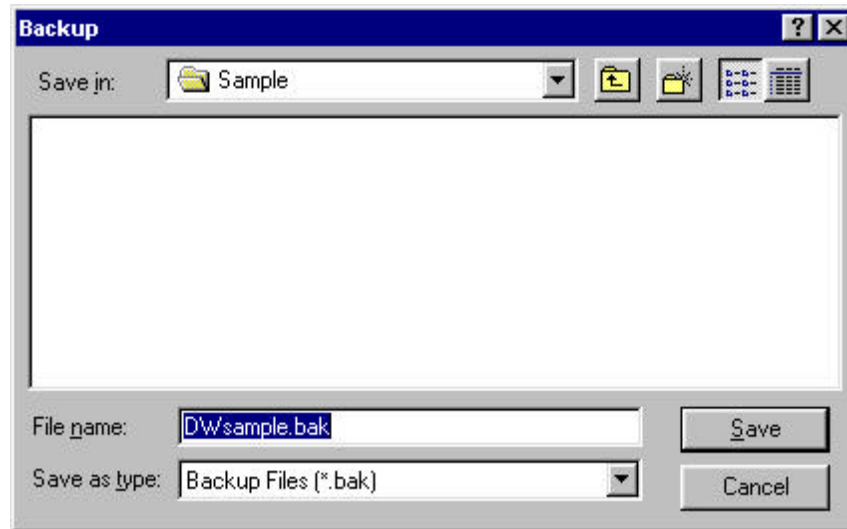


Figure 3-5: Backup Database List Box

To restore a Backup file:

1. Use Windows Explorer to locate the desired backup file.
2. Rename the file to a new name with a file extension **(.DDW)**.
3. Start the DataWorker LE software and use the *Open* command from the *File* menu and select the renamed **(.DDW)** file.

3.1.8 Port Configuration

The Port Configuration command is used to set a communication (COM) port so the PC and the Logger can communicate. This command is very important when the software is first installed or PC hardware configurations have changed.

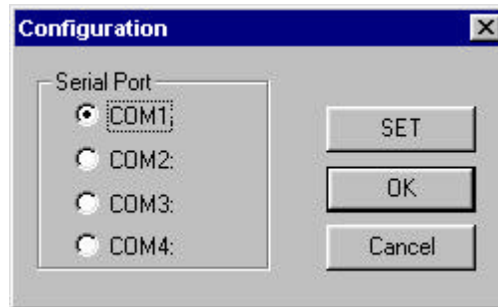


Figure 3-6: Port Configuration Dialog Box

To configure a Com port:

1. Select the *Port Configuration* command from the *File* menu and the Configuration dialog box will appear.
2. Click the option button next to a COM port depending on which serial port the PC is set up for RS-232 communications.
3. Click the *SET* command button to use the selection as the default whenever the program is started.
4. Click the *OK* command button to use the selection for the current workbook file or *Cancel* to exit without changing.

3.1.9 Page Setup

The Page Setup command sets up page parameters individually for each worksheet.

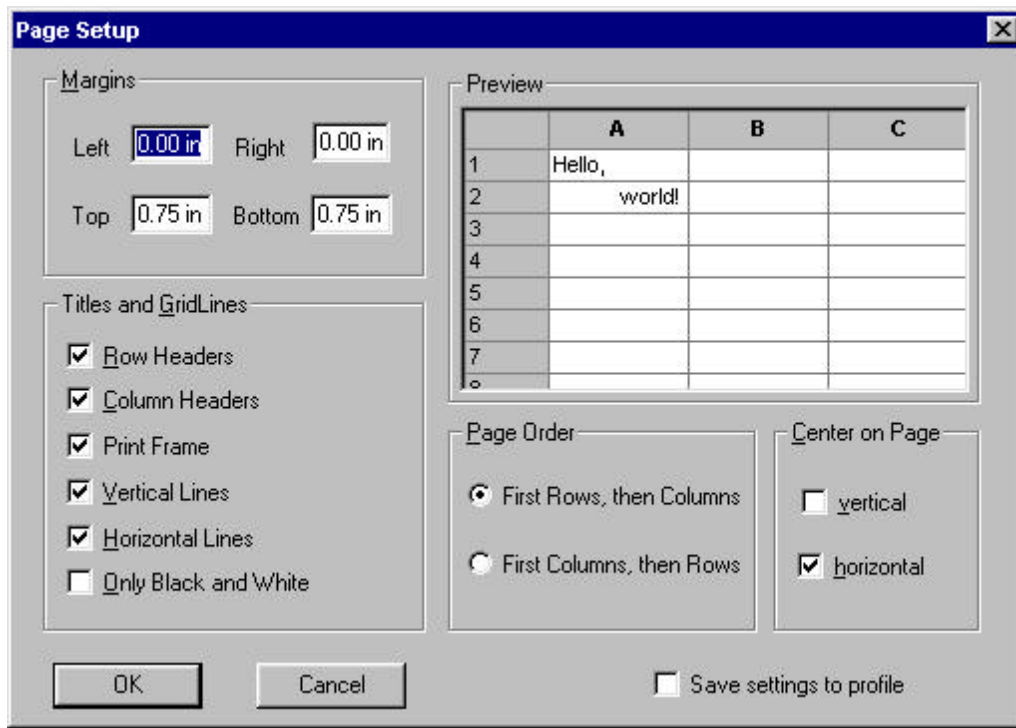


Figure 3-7: Page Setup Dialog Box

To set the page parameters:

1. Select the *Page Setup* command from the *File* menu.
2. Select desired parameters to apply to the worksheet.
2. Click the **OK** command button to use the current page setup selections.
3. Click the **Cancel** command button to leave the page setup command without changing anything.



Selections made using the *Page Setup* command will not be visible on the worksheet it is only used for print formatting. To view the selections, use the *Print Preview* command (refer to section 3.1.11 *Print Preview*).

3.1.10 Page Header / Footer

The Page Header / Footer command places text on the top and bottom of the printed worksheet.



Some of the worksheets contain default information in the Header and Footer fields, to view use the Print Preview command. Refer to section 3.1.11 *Print Preview*.

Figure 3-8: Header / Footer Dialog Box

To add Header and/or Footer information:

1. Select the *Page Header/Footer* command from the *File* menu.
2. Click the Header or Footer tab.
3. Determine where to place the note: left, center or right side of the worksheet. Click a text field and type the desired text.
4. There are options to change the type of font, distance the note is from the frame edges and type of page numbering (See *Figure 3-8*).
5. Click the **OK** command button to accept the Header/Footer or click **Cancel** to return to the worksheet without making any changes.



The Header/Footer information will not be visible on the worksheet. It is only used for printing. To view the Header/Footer information, use the Print Preview command. Refer to section 3.1.11 *Print Preview*.

3.1.11 Print Preview

The Print Preview command shows a preview of the page(s) to be printed. This command is useful when confirming print options the user has set up for printing.

To view a print preview:

1. Select the *Print Preview* command from the *File* menu and the Print Preview window will appear.

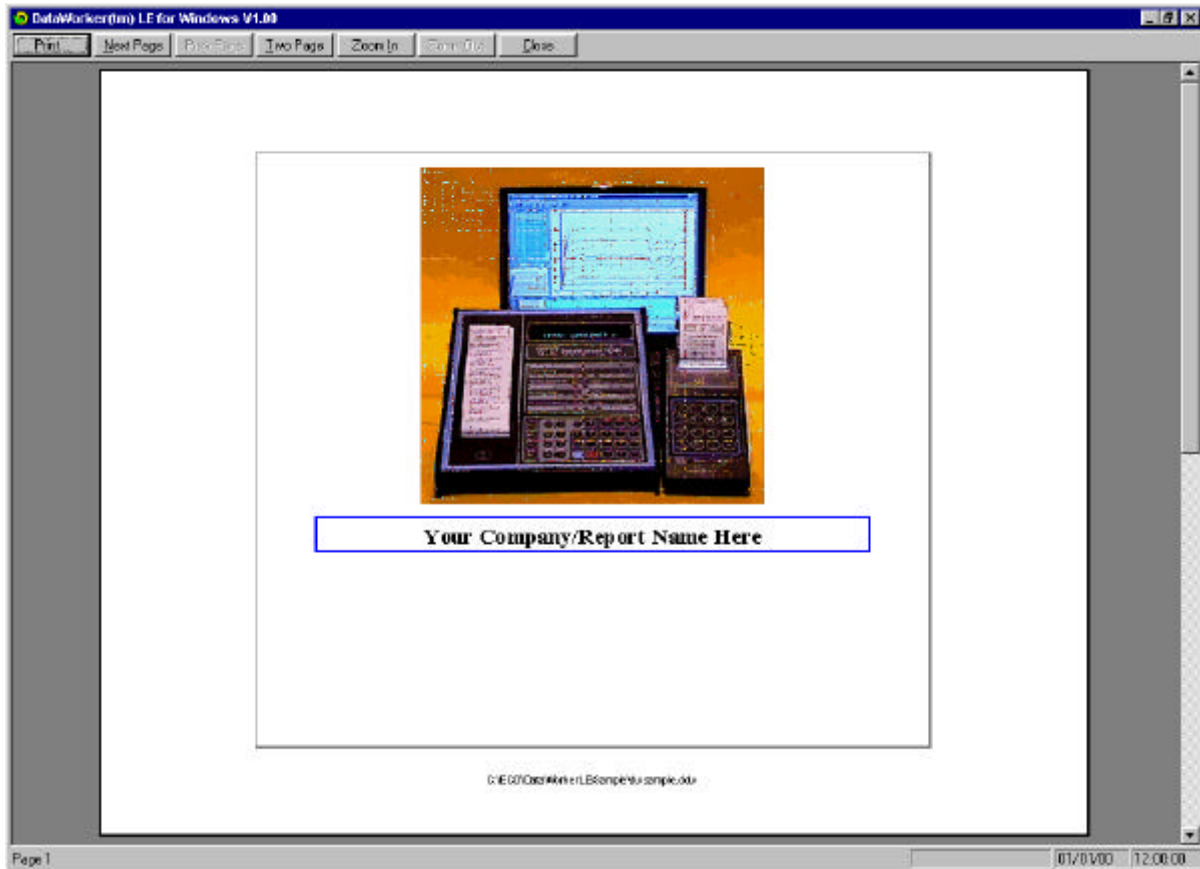


Figure 3-9: Print Preview Window

- Click the *Print* command button to proceed with printing.
- Click the *Two-Page* command button if there is more than one page in the report to view them side by side.
- Click the *Next Page* or *Prev Page* command button to view other pages of a multiple page report.
- Click the *Zoom In* command button to observe small details, and *Zoom Out* to restore.
- Click the *Close* command button to close the Print Preview window.

3.1.12 Print

The Print command prints worksheet information from the workbook. The options that appear on the Print dialog box will depend on the type of printer and the printer driver installed.

To print a worksheet:

1. Select the **Print** command from the **File** menu and a standard Windows or driver-dependent print dialog box will appear.
2. Select the desired print options.

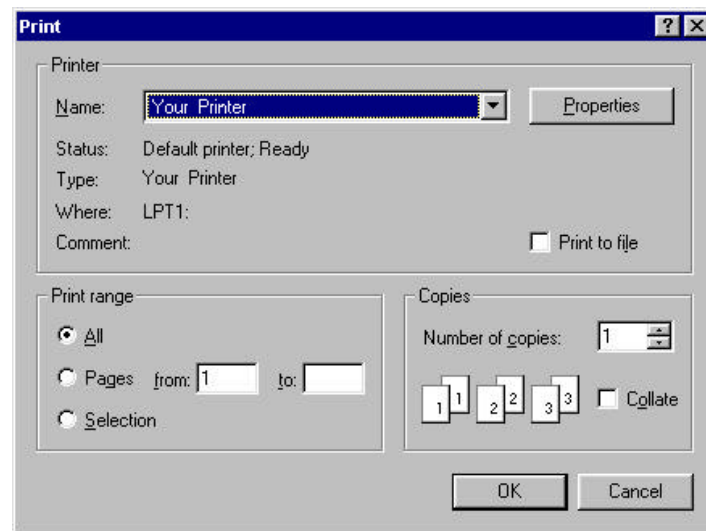


Figure 3-10: Print Dialog Box

3. Click the **OK** command button to print the worksheet.
4. Click the **Cancel** command button to close the print window without printing.

The Print command can be accessed on all worksheet Toolbars. This command can also be used by pressing **Ctrl + P**

- **Print Button:**

3.1.13 Print Report

Select the **Print Report** command from the **File** menu to print the selected worksheets from the Report worksheet as discussed in section 2.6.2 *Report Configuration*.

The options that appear on the Print Report dialog box will depend on the type of printer and the printer driver installed.

To print a worksheet:

1. Select the **Print Report** command from the **File** menu and a standard Windows or driver-dependent print dialog box will appear.
2. Select the desired print options.

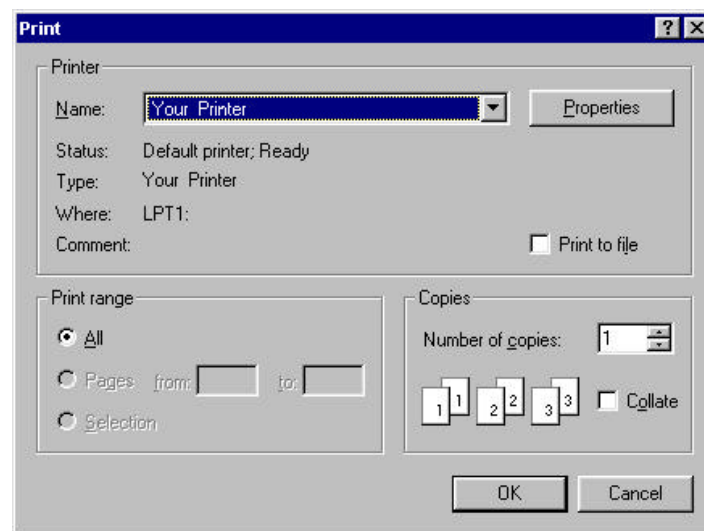


Figure 3-11: Print Report Dialog Box

3. Click the **OK** command button to print the report.
4. Click the **Cancel** command button to close the print window without printing.

3.1.14 Recent Files 1, 2, 3, etc...

The most recently loaded workbook file names are displayed at the bottom of the File menu. To open one of these files, click the name of the desired workbook file or press the appropriate number beside it.

3.1.15 Exit

Select the **Exit** command to quit the DataWorker LE program. A message box will prompt the user to save changes. If the user decides to save the changes, all data and configuration changes will be saved with the workbook file.

3.2 Edit Menu

The Edit menu allows the user to undo, redo changes and remove or hide data runs.

3.2.1 Undo

Select the *Undo* command to undo any previous action. For example if the filter command is used and then the user decides that command was not necessary, the Undo command will restore it back to its original format. Multiple undo actions can be performed with the undo command.

The Undo command can be accessed on the Toolbars of the Finder, Data, and Documentation worksheets.

- **Undo Button:** 

3.2.2 Redo

Select the *Redo* command to restore the mistake made by using the Undo command. Like Undo, the user can use Redo to restore all of the Undo actions.

The Redo command can be accessed on the Toolbars of the Finder, Data, and Documentation worksheets.

- **Redo Button:** 

3.2.3 Remove Row

Select the *Remove Row* command to remove a data run row that is not needed. This command is helpful when data has been collected and the user feels it is not beneficial to the workbook data set.



This command is permanent and the data row can not be retrieved once performed. The software program will warn the user with a message box.

3.2.4 Hide Row

Select the *Hide Row* command to exclude a row without eliminating it completely from the workbook file when analyzing the uploaded data run. This command is similar to the filter function (refer to section 2.2.6 *Filters*), and is helpful when data has been collected and it may not be beneficial to the data set. To restore hidden data set row(s) click the Red *Filter Reset* button located on the top left of the parameter columns.

3.3 View Menu

The View menu commands assist the user to manipulate areas on all of the worksheet displays.

3.4.1 Toolbar

Select the *Toolbar* command from the *View* menu to activate or deactivate the toolbar. Deactivating the Toolbar will allow the user to view more of the worksheet area. When there is a checkmark beside the Toolbar command it is activated and when the checkmark is not there it is deactivated.

3.4.2 Status Bar

Select the *Status bar* command from the *View* menu to activate or deactivate the Status bar on the bottom of the worksheets. Deactivating the Status bar will allow the user to view more of the worksheet area. When there is a checkmark beside the Status bar command it is activated and when the checkmark is not there it is deactivated.

3.3.3 Zoom In

Select the *Zoom In* command from the *View* menu to make the current worksheet view larger. The Zoom In command has the capability to zoom in multiple times. When the maximum zoom level has been reached the Zoom In command will be dimmed.

The Zoom In command can be accessed on the Toolbars of the Cover, Finder, Data, Documentation, and Report worksheets. This button will speed up the Zoom In process if multiple zooms are desired.

- **Zoom In Button:** 

3.3.4 Zoom Out

Select the *Zoom Out* command from the *View* menu to make the current worksheet view smaller. The Zoom Out command has the capability to zoom out multiple times. When the minimum zoom has been reached the Zoom Out command will be dimmed.

The Zoom Out command can be accessed on the Cover, Finder, Data, Documentation, and Report worksheets. This button will speed up the Zoom Out process if multiple zooms are desired.

- **Zoom Out Button:** 

3.3.5 100%

Select the **100%** command from the *View* menu to return the worksheet to its default display size.

The 100% command can be accessed on the Toolbar of the Cover, Finder, Data, Documentation, and Report worksheets.

- **100% Button:** 

3.4 Format Menu

The Format menu includes commands that change the layout or pattern of the text in user configurable cells.

3.4.1 Bold

Select the ***Bold*** command from the *Format* menu to turn the data in user configurable cells **bold**. Select the Bold command again to return to standard format.

The Bold command can be accessed on the Toolbar of the Finder, Data, and Documentation worksheets.

- **Bold Button:** 

3.4.2 Italic

Select the ***Italic*** command from the *Format* menu to turn the data in user configurable cells *italic*. Select the Italic command again to return to standard format.

The Italic command can be accessed on the Toolbar of the Finder, Data, and Documentation worksheets.

- **Italic Button:** 

3.4.3 Underline

Select the ***Underline*** command from the *Format* menu to underline the data in user configurable cells. Select the underline command again to return to standard format.

The Underline command can be accessed on the Toolbar of the Finder, Data, and Documentation worksheets.

- **Underline Button:** 

3.4.4 Alignment (Left, Center, Right)

Select the ***Align Left***, ***Center*** or ***Align Right*** command from the *Format* menu to align the data in user configurable cells on the Finder, Data, and Documentation worksheets.

The alignment commands can be accessed on the Toolbar of the Finder, Data, and Documentation worksheet.

- **Alignment Buttons:**  (***Align Left***, ***Center***, and ***Align Right***)

3.5 Instrument Menu

The *Instrument* menu commands transfers and uploads data from the OM-550 and OM-5000 into the DataWorker LS software.



The Logger must be connected to a PC and the proper communication port must be configured to properly use the commands on this menu (refer to section 3.1.8 Port Configuration).

3.5.1 OM-550

The Read OM-550 command starts the data transfer process after completing the data collection process with the OM-550.

To read OM-550 data:

1. Connect the OM-550 to the PC (refer to the appropriate section in the Hardware manual).
2. Select the *Read OM-550* command from the *Instrument* menu and a status bar dialog box will appear indicating that data retrieval from the OM-550 has begun.

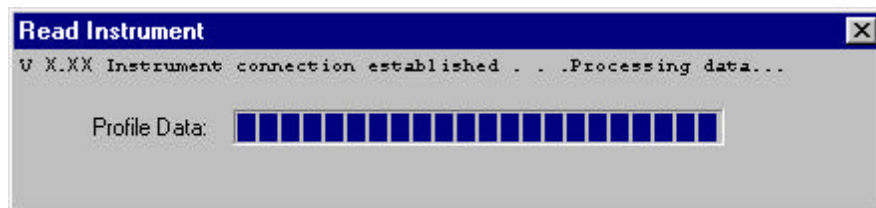


Figure 3-12: Read OM-550 Dialog Box

Once data transfer is complete, the dialog box will disappear and will return to the current worksheet.



If the OM-550 has not collected enough data to create a complete graph a message box will appear (See Figure 3-13).

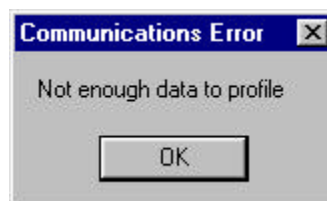


Figure 3-13: Communication Error Dialog box

The Read OM-550 command can be accessed on all worksheet Toolbars.

- **Read OM-550 Button:**

3.5.2 Read OM-5000

The Read OM-5000 command starts the data transfer process after completing the data collection process with the OM-5000.

To read OM-5000 data:

1. Connect the OM-5000 to the PC (refer to the appropriate section in the Hardware manual).
2. Select the *Read OM-5000* command from the *Instrument* menu and a status bar dialog box will appear indicating that data retrieval from the OM-5000 has begun.

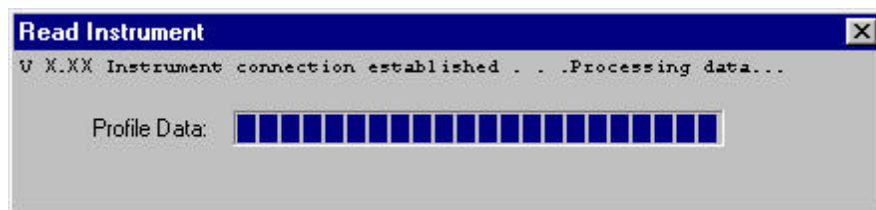


Figure 3-14: Read OM-5000 Dialog Box

Once data transfer is complete, the dialog box will disappear and will return to the current worksheet.



If the OM-5000 has not collected enough data to create a complete graph a message box will appear (See Figure 3-15).

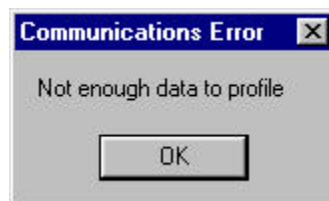


Figure 3-15: Communication Error Dialog box

The Read OM-5000 command can be accessed on all worksheet Toolbars.

- **Read OM-5000 Button:**

3.6 Tools Menu

Options in this menu make it easy to analyze results and change the appearance of the Data Graph.



To remove any drawing object added to the Data Graph, select it with the mouse pointer or with the selection window and then press the [Delete] key.

3.6.1 Magnify Tool

The Magnify tool enlarges any selected area of the Data Graph for easy visual examination.

To magnify a portion of the Data Graph:

1. Click the *Magnify* tool from the *Tools* menu.
2. Position the cursor on a desired section the Data Graph to select one corner of the area to enlarge.
3. Press the left mouse button and drag the cursor diagonally to the opposite corner of the box. An outline of the box appears as you drag.
4. Release the left mouse button when the outline of the area to be magnified is visible. The area inside the box is then magnified to fill the entire Data Graph.

To show even more detail in the Data Graph, Magnify can be performed multiple times. If the Magnify tool reaches the maximum zoom capability the software will display a message box informing that the user has “Zoomed to Tight”.

When using the Magnify tool, the Magnify Map uses a red box to indicate the area currently magnified. If the data graph was previously magnified, the current level of magnification is displayed as the smallest red box on the Magnify Map (Previous magnified areas are noted with gray boxes).

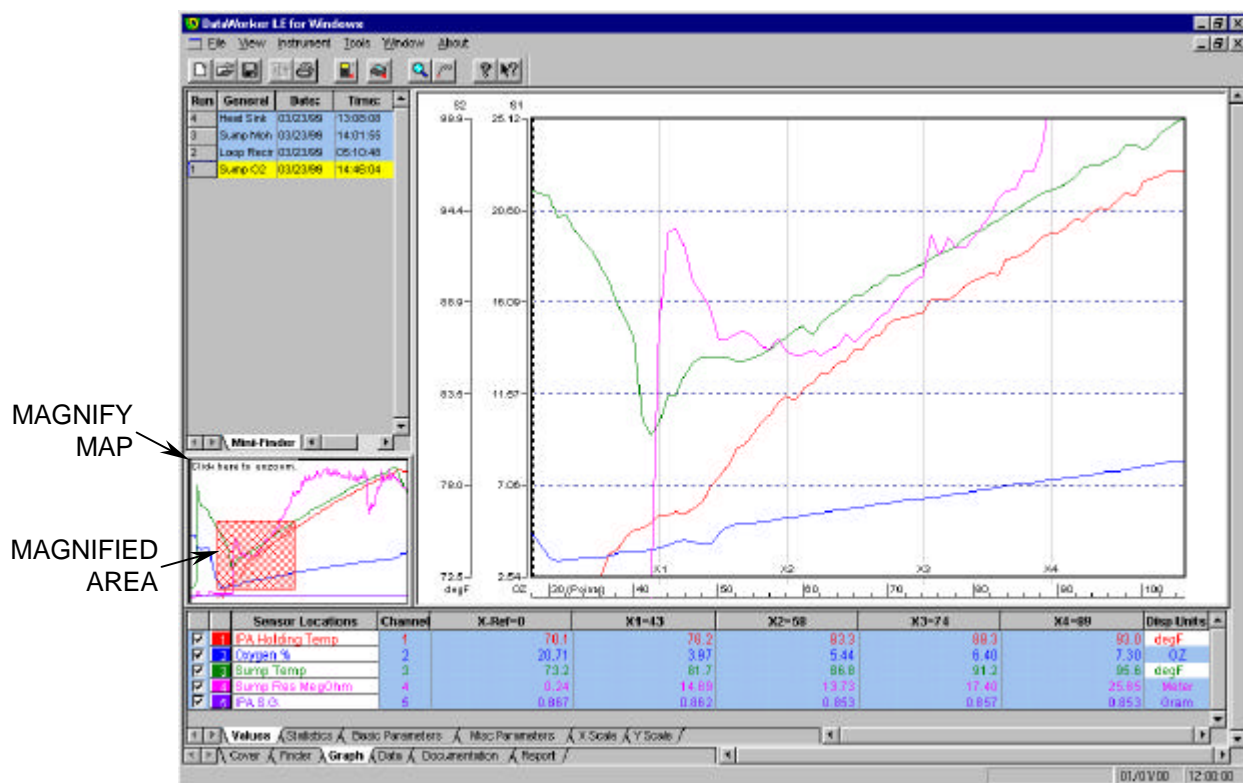


Figure 3-16: Magnify Map

When the Magnify tool has been used multiple times, click the Magnify map once to go back to a previously selected level of magnification.

When a portion of the Data Graph is magnified and then display statistics functions, the parts of the graph that disappear off the top or bottom of the graph continue to be used in the analysis. In other words, events can be described between any two times, distances, or point numbers, by limiting the range of X-values used in statistics functions. All the Y-values between the specified X-values are used in the computations, even if they do not appear in the magnified graph.

The Magnify command can be accessed on the Graph worksheet Toolbar.

- Magnify Button:

3.6.2 Notes Tool

The Notes tool adds a leader with text to any portion on the Data Graph to label special areas of interest.

To add notes to the Data Graph:

1. Select the *Notes* tool from the *Tools* menu.
2. Position the cursor at the desired location to start the note leader, click and drag the note leader to the desired location where the note text box is to be placed and release the mouse button.
3. A standard Windows color pallet will then appear allowing the user to select a Fill color for the note text box.
4. Click the Note text box once and type the desired note text.

The Notes tool can be accessed on the Graph worksheet Toolbar.

• **Notes Button:** 

3.6.3 Line Color

When a tool or drawing object has been added to the Data Graph the color of the exterior line can be changed at any time.

To change line color:

1. Select the drawing object with the mouse pointer or with the selection window.
2. Select the *Line Color* command from the *Tools* menu and then a standard Windows color pallet will appear.
3. Select a line color and click the *OK* command button.



A line color can also be changed by double-clicking a line. A standard windows color pallet will appear allowing the user to select the desired color.

3.6.4 Fill Color

When a Note or drawing object with Fill color has been added to the Data Graph, its color can be changed at any time.

To change Fill color:

1. Select the drawing object with the mouse pointer or with the selection window.
2. Select the *Fill Color* command from the *Tools* menu and then a standard Windows color pallet will appear.
3. Select a Fill color and click the *OK* command button.



A Fill color can also be changed by double-clicking the Fill color of a drawing object. A standard windows color pallet will appear allowing the user to select the desired color.

3.6.5 Move to Front

When multiple drawing objects are overlapped on the Data Graph the Move to Front command will move an object that is behind one or more objects to the front.

To move a drawing object to the front:

1. Select the rear drawing object with the mouse pointer or with the selection window.
2. Select the *Move to Front* command from the *Tools* menu and then the drawing object will move in front of the overlapped drawing object(s).

3.6.6 Move to Back

When multiple drawing objects are overlapped on the Data Graph the Move to Back command will move an object that is in front of one or more objects to the back.

To move a drawing object to the back:

1. Select the front drawing object with the mouse pointer or with the selection window.
2. Select the *Move to Back* command from the *Tools* menu and then the drawing object will move behind the overlapped drawing object(s).

3.6.7 Move Forward

When multiple drawing objects are overlapped on the Data Graph the Move Forward command will move an object that is behind multiple objects one object forward.

To move a drawing object forward:

1. Select a drawing object that is behind one or more drawing object with the mouse pointer or with the selection window.
2. Select the *Move Forward* command from the *Tools* menu and then the drawing object will move one object forward.

3.6.8 Move Back

When multiple drawing objects are overlapped on the Data Graph the Move Back command will move an object that is in front of multiple objects one object back.

To move a drawing object to the back:

1. Select the front drawing object with the mouse pointer or with the selection window.
2. Select the *Move Back* command from the *Tools* menu and then the drawing object will move one object back.

3.6.9 Line

The Line command adds a line anywhere on the Data Graph.

To add a line to the Data Graph:

1. Select *Line* from the *Tools* menu.
2. Position the cursor at the desired location to start the line, Press and hold the left mouse button and drag the line to the desired location where the end of the line is to be placed and release the mouse button.

3.6.10 Rectangle

The Rectangle command adds a rectangle anywhere on the Data Graph.

To add a rectangle to the Data Graph:

1. Select *Rectangle* from the *Tools* menu.
2. Position the cursor on the Data Graph for the desired location to place the rectangle.
3. Press and hold the left mouse button and drag the cursor diagonally to the opposite corner of the rectangle. An outline of the rectangle appears as you drag.
4. Release the left mouse button when the desired rectangle size is achieved.

3.6.11 Round Rectangle

The Round Rectangle command adds a rectangle with rounded corners anywhere on the Data Graph.

To add a round rectangle to the Data Graph:

1. Select *Round Rectangle* from the *Tools* menu.
2. Position the cursor on the Data Graph for the desired area to place the round rectangle.
3. Press and hold the left mouse button and drag the cursor diagonally to the opposite corner of the rectangle. An outline of the rectangle appears as you drag.
4. Release the left mouse button when the desired rectangle size is achieved.

3.6.12 Ellipse

The Ellipse command adds an ellipse anywhere on the Data Graph.

To add an ellipse to the Data Graph:

1. Select *Ellipse* from the *Tools* menu.
2. Position the cursor on the Data Graph for the desired area to place the ellipse.
3. Press and hold the left mouse button and drag the cursor diagonally to the opposite corner of the ellipse. An outline of the ellipse appears as you drag.
4. Release the left mouse button when the desired ellipse size is achieved.

3.6.13 Polygon

The Polygon command adds a polygon anywhere on the Data Graph.

To add a polygon to the Data Graph:

1. Select *Polygon* from the *Tools* menu.
2. Position the cursor on the Data Graph for the desired area to place the first corner of the polygon.
3. Drag the cursor to another point on the Data Graph and click once to place another corner of the polygon. Repeat until all sides of the polygon have been positioned on the Data Graph and double click the last point to stop adding more polygon edges.

3.6.14 Y-Reference

The Y-Reference command adds an Y-Reference line with Y location text to the Data Graph to locate the Y location of special areas of interest.

When an Y Reference is added to the Data Graph it can be moved vertically up and down. The Y location text is then automatically updated to the new location.

To add an Y Reference to the Data Graph:

1. Select the *Y Reference* from the *Tools* menu.
2. Position the cursor on the Data Graph at desired location and click to place the Y Reference.
3. A standard Windows color pallet will then appear allowing the user to select a line color for the Y Reference line.

3.7 Window Menu

The Window menu arranges opened workbook files for viewing and quick access.

3.7.1 Cascade

Select the *Cascade* command from the *Window* menu to cascade opened workbook files from the upper left corner overlapping the workbooks downward so each workbook title bar is visible.

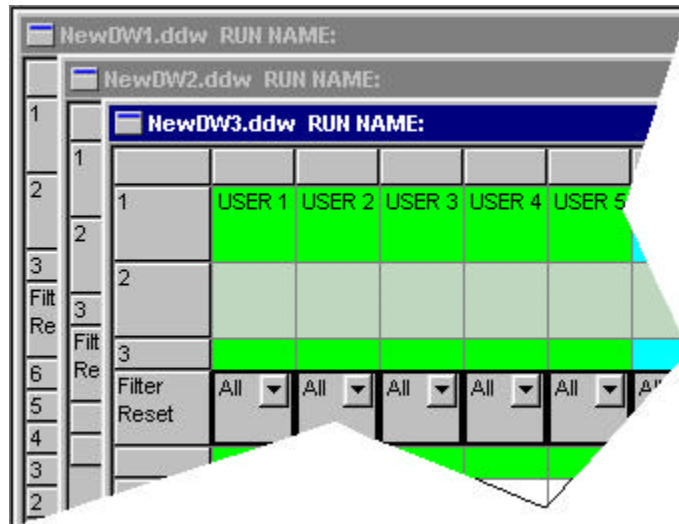


Figure 3-17: Cascaded Workbooks

3.7.2 Tile

Select the *Tile* command from the *Windows* menu to arrange the open workbook files in a rectangular fashion dividing the workbook files into smaller sizes arranged so they fit next to each other on the display.

3.7.3 Open File

The lower section of the *Window* menu shows the open workbook files. This allows quick access to all of the open workbook files. Selecting a workbook file name will to bring it to the front of the open workbooks and make it active.

3.8 About Menu

The Help menu is a complete online reference tool that can be used at any time. Help is especially useful when information is needed quickly.

- Index
- Using Help
- About DataWorker

3.8.1 Index

DataWorker LE for Windows does not include a help index. Please refer to the appropriate sections of this manual for more information.

3.8.2 Using Help

Select the *Using Help* command from the *Help* menu to display the Microsoft How to Use Help Window. This is the best way to learn about using the DataWorker LE Software Help system.



Figure 3-18: Using Help Window

3.8.3 DataWorker

Select *DataWorker* from the *Help* menu to display the software version, release date and company information.

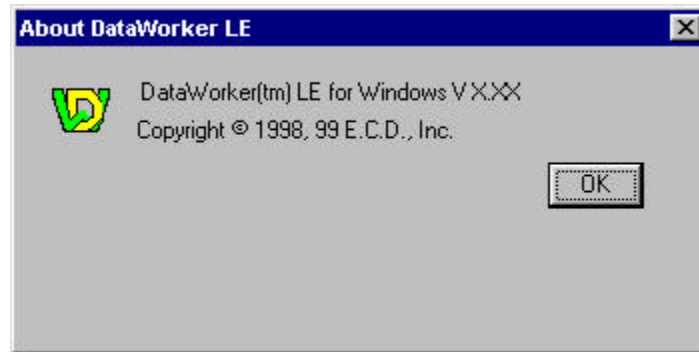


Figure 3-19: DataWorker Dialog Box

The About command can be accessed on all of the worksheet Toolbars.

- **About Button:**

3.8.4 Context Help

Use the Context Help command button to obtain Help on a specific portion of the software. Click the *Context Help* button on the Toolbar, the mouse pointer will change to an arrow and question mark. Click somewhere in the screen on any worksheet, such as another Toolbar button. The Help information will be shown for the item clicked.

- **Context Help Button:**























3.8.5 Copy Button

There is a Copy Button that can be accessed on the Graph worksheet Toolbar. This button copies the Graph worksheet to the clipboard so it can be pasted into other applications.

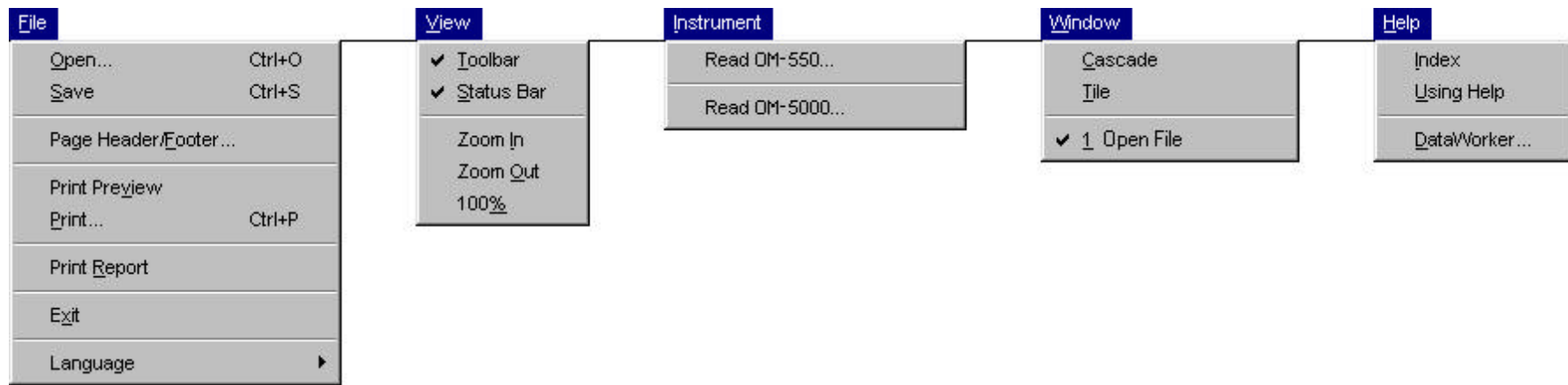
- **Copy Button:**

APPENDIX A: Toolbar Buttons & Pull-Down Menus

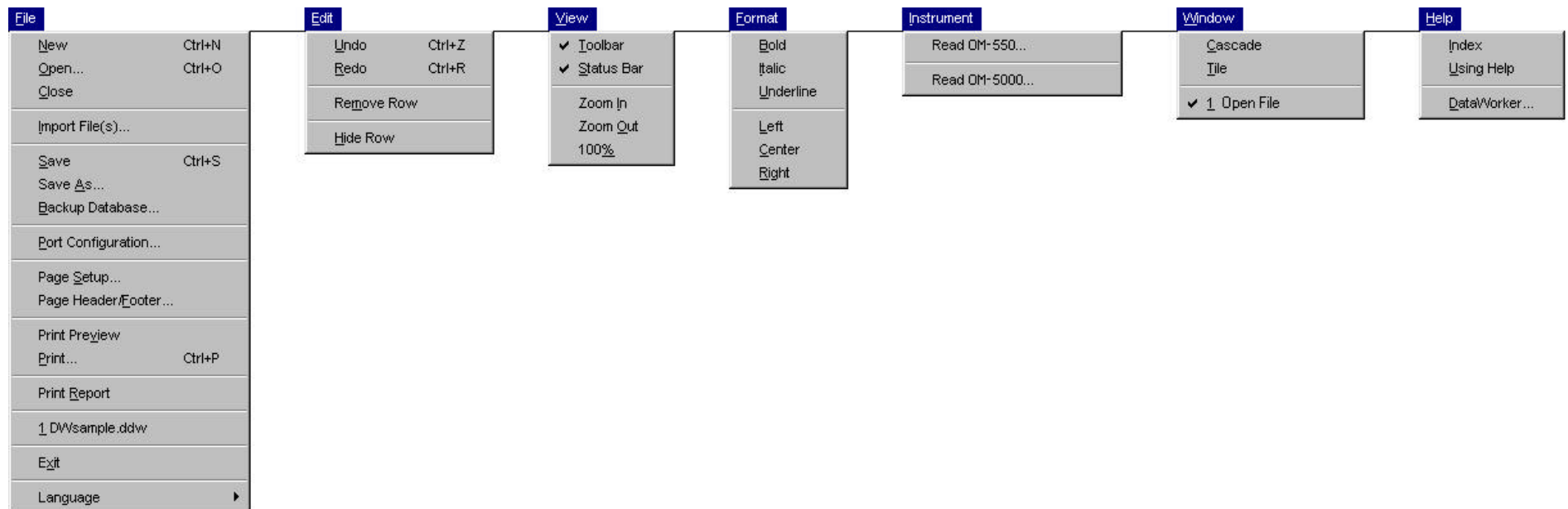
DataWorker LE Tool buttons:

	About		Open
	Align center		Print
	Align left		Read OM-550
	Align right		Read OM-5000
	Bold		Redo
	Context Help		Save
	Copy		Underline
	Italic		Undo
	Magnify		Zoom 100%
	New		Zoom In
	Notes		Zoom Out

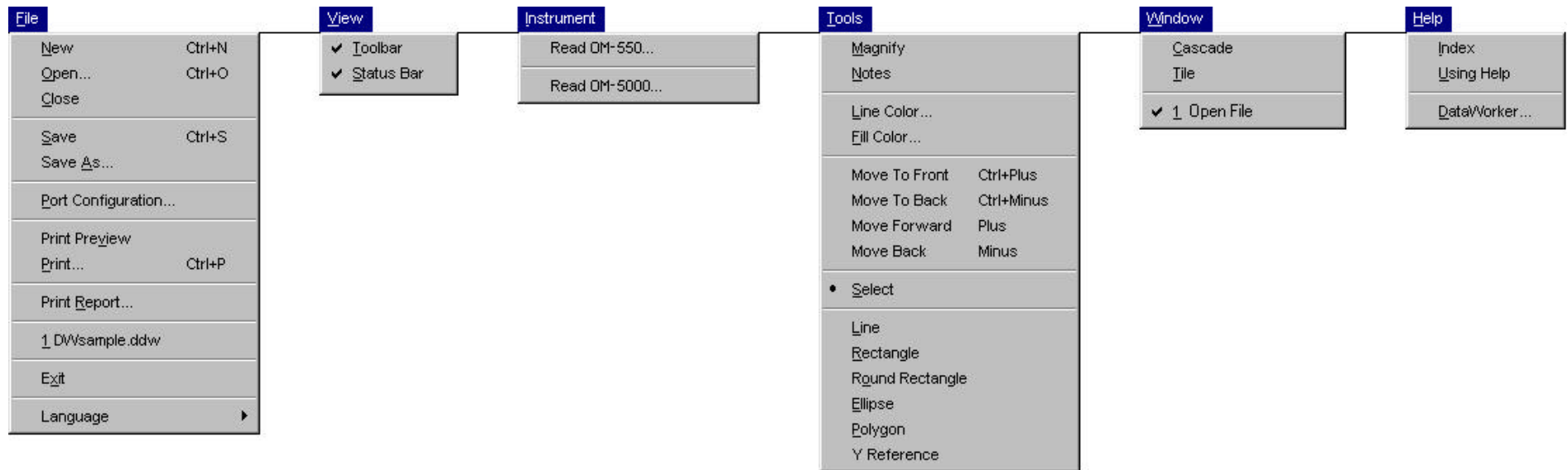
• Cover Worksheet Pull-Down menus:



• Finder Worksheet Pull-Down menus:



• **Graph Worksheet Pull-Down Menus:**



• **Data Worksheet Pull-Down menus:**

File

NewCtrl+N

Open...Ctrl+O

Close

Import File(s)...

SaveCtrl+S

Save As...

Backup Database...

Port Configuration...

Page Setup...

Page Header/Footer...

Print Preview

Print...Ctrl+P

Print Report

1_DWsample.ddw

Exit

Language▶

Edit

UndoCtrl+Z

RedoCtrl+R

Remove Row

Hide Row

View

✓Toolbar

✓Status Bar

Zoom In

Zoom Out

100%

Format

Bold

Italic

Underline

Left

Center

Right

Instrument

Read OM-550...

Read OM-5000...

Window

Cascade

Tile

✓1Open File

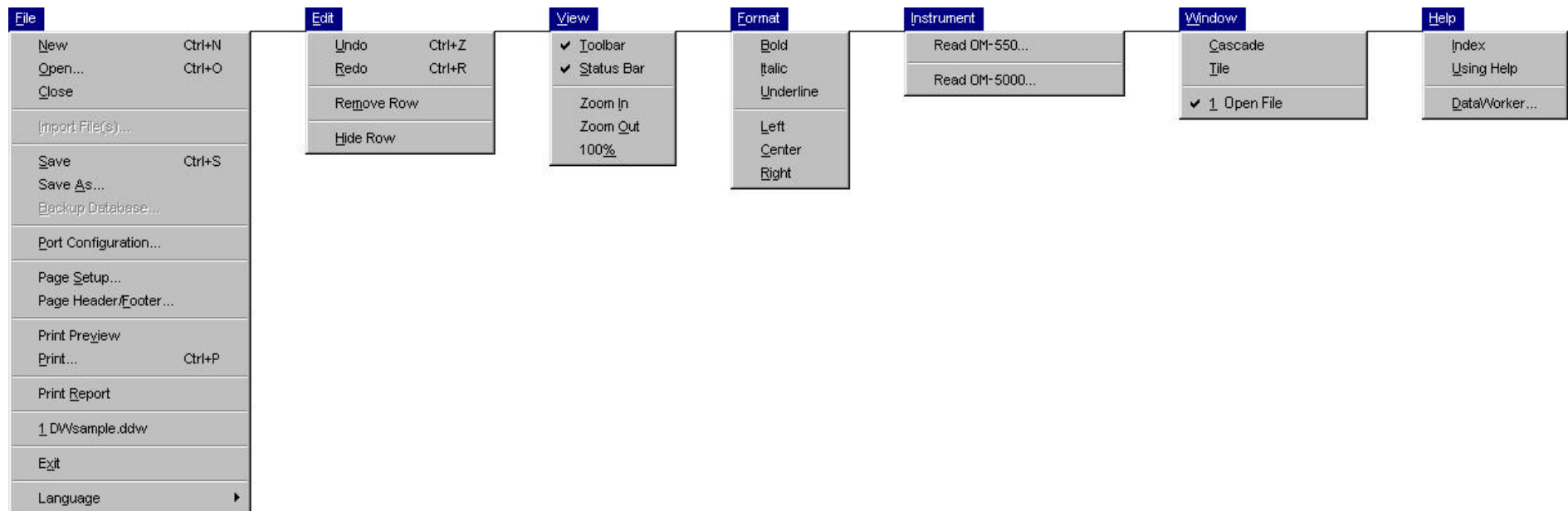
Help

Index

Using Help

DataWorker...

• Documentation Worksheet Pull-Down menus:



• Report Worksheet Pull-Down menus:

