



# BIOWAVE DNA

## QUICK REFERENCE GUIDE

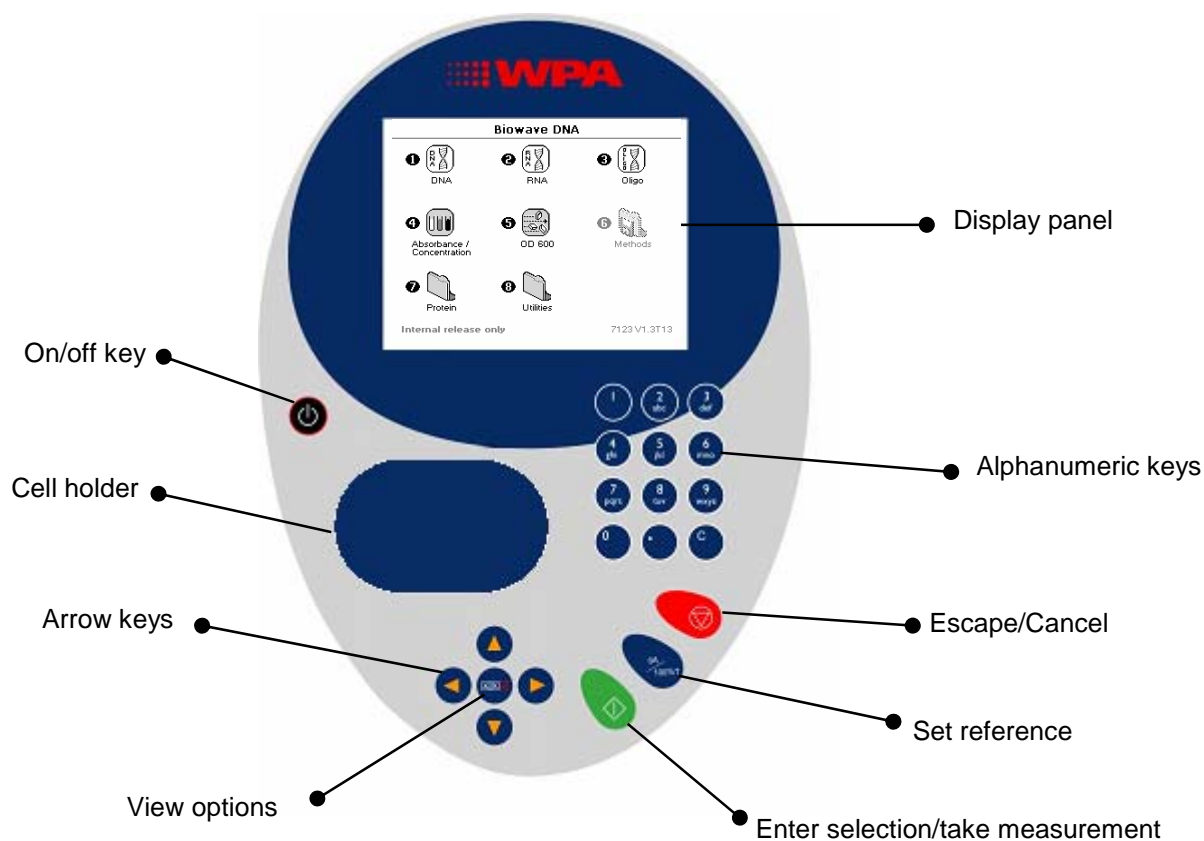
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## The Instrument



### Key

### Action

On/off key

Turns the instrument on/off

Cell holder

Insert the cell here. The instrument accepts standard 10 mm pathlength quartz, glass or plastic cells. The light beam is directed from RIGHT to LEFT.

Arrow keys

Use the four arrow keys to navigate around the display and select the required setting from the active (highlighted) option.

View Options:

View options for that application mode.

Display panel

Displays folders, menu options that guide you through taking measurements and displays your results.

Alphanumeric keys

Use these to enter parameters and to write text descriptions where appropriate, or required. Use repeated key presses to cycle through lower case, number and upper case characters. Leave for 1 second before entering next character. Use C button to backspace and 1 to enter a space.

Escape/Cancel:

Escape from a selection and return to the previous folder. Stop making measurements.

Set Reference: 0A/100%T

Set reference to 0.000 A or 100%T on a reference solution at the current wavelength in the mode selected. When in scan mode, do a reference scan.

Enter/OK/Next:

Enter, or confirm, a selection. Take a measurement.

## The Display Screen



### Navigation

Move between boxes using the up and down arrows.

### Enter parameters by:

using the key pad numbers

OR

If the box contains the symbol , either type in a value or press the options key , and choose a parameter from the next screen.


OR

If the box contains arrow symbols, use the left and right arrow keys to select the required parameter.

Press OK to save the selected parameters and go on to the next screen

Press Cancel to erase selections and return to the previous screen


### Taking Measurements


1. Insert the reference sample in chamber. Press the blue 0A/100% key.
2. Insert the first sample and press the green Enter key .

Repeat 2 for each sample.

### Results

The results are displayed on screen.

Press the  key, or use the number keys to select further options either relevant to the application used, to print the results, view the parameters etc. – see below for details.

Press Cancel: , to exit the application.

### Options (select using key pad numbers)

1. View parameters for the experiments
2. Print the results
3. Display a graph of the results
- 4,5,6 Specific to an application
7. Define the sample number you wish to start from
8. Save the parameters as a method in the Methods folder with a defined method name.
9. Toggle auto-print on/off. Default is off.

Exit options by pressing , or wait.

Experienced operators can use the numeric keys as a shortcut to the option required without needing to enter the Options menu.

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## Parameter Dictionary

Parameter	Folder	Sub-Folder	Manual page	Description and options
Auto Standby	Utilities	Preferences	40	Select whether to use a standby mode after defined periods. Options: 1 hour, 2 hours, at night or off
Auto-Print	Utilities	Printer	39	Select whether auto-print is on or off. When on, results are automatically printed after a measurement is taken. When off, printing has to be initiated manually
Background	DNA RNA Oligo Protein	Protein UV	11	Select whether the background correction at 320 nm is used or not. Options: On or Off
			13	
			15	
			24	
Brightness	Utilities	Contrast	40	Adjust the brightness using the left and right arrows
Calibration	Protein	BCA	26	Select the calibration mode. Standard, measure prepared standard or Manual, enter values using key pad numbers
		Bradford	29	
		Lowry	32	
		Biuret	35	
Coeff. 1	Protein	Protein UV	24	Enter coefficient 1 (for absorbance at 280 nm). Default is 1.55 as in Christian and Warburg equation: protein (mg/ml) = 1.55*Abs 280 – 0.76*Abs 260
Coeff. 2	Protein	Protein UV	24	Enter coefficient 2 (for absorbance at 260 nm). Default is 0.76 as in Christian and Warburg equation: protein (mg/ml) = 1.55*Abs 280 – 0.76*Abs 260
Concentration	Absorbance/ Concentration		19	Enter the concentration of the standard. Range 0.01-9999. Only available when the 'standard' mode has been selected.
Contrast	Utilities	Contrast	40	Adjust the contrast using the left and right arrows
Correction	Cell Culture		20	Allows a correction factor to be applied to match the instrument to read the same OD as other instruments
Curve Fit	Protein	BCA	26	Select the type of curve fit to be used. Options: straight line regression (forces the line through the origin), zero regression, interpolated or cubic spline
		Bradford	29	
		Lowry	32	
		Biuret	35	
Day	Utilities	Date and Time	39	Enter the day of the month
Diluent	DNA RNA Oligo Protein	Protein UV	11	Enter the volume of the diluent. Range: 0.01 – 9999
			13	
			15	
			24	
Dilution Factor	DNA RNA Oligo Protein	Protein UV	11	Enter the dilution factor using the keypad numbers or press <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> to calculate the dilution factor
			13	
			15	
			24	
DP	Absorbance/ Concentration Protein	BCA Bradford Lowry Biuret	18	Determines the number of decimal places in the results (0-2). Results have a maximum of 5 figures
			26	
			29	
			32	
		Biuret	35	

Parameter	Folder	Sub-Folder	Manual page	Description and options
Factor	Absorbance/ Concentration		18	Enter the Factor. Default is 1, range 0.001-9999.
Factor	DNA		11	Enter the factor. Default is 50, range: 0.01-9999
Factor	Oligo		15	Enter the factor. Default is 33, range: 0.01-9999
Factor	RNA		13	Enter the factor. Default is 40, range: 0.01-9999
Factor	Cell Count		20	Enter the factor. Relates measures absorbance to cell density, range: 0.01 to 9999
History	Utilities	Preferences	40	Select whether to use previously entered parameters when the instrument is switched on or to use default values. Options: On or Off
Hour	Utilities	Date and Time	39	Enter the hour. Range 1-24
Language	Utilities	Regional	39	Select the language used on the display screen. Options: German, French, English, Spanish or Italian.
Minutes	Utilities	Date and Time	39	Enter the minute. Seconds are zeroed when OK is pressed
Mode	Absorbance/ Concentration		17	Select 'Absorbance' to make absorbance measurements, or to make concentration measurements select 'Factor' if the factor is known or 'Standard' if it will be calculated from a standard of known concentration
Month	Utilities	Date and Time	39	Select the month
Multiplier	Cell Culture		20	Sets the exponent for the the cells/ml value, either 1000 or 1,000,000
Number Format	Utilities	Regional	39	Set the decimal point style: 999,9 or 999.9
Pathlength	DNA RNA Oligo Protein	Protein UV	11	Select the relevant path length – 5 or 10 mm
			13	
			15	
			24	
Printer	Utilities	Printer	39	Select the printer to send the results to. Options: Built in (internal printer), or to a computer via either USB port or Bluetooth
Replicates	Protein	BCA	26	Select the number of standards to be measured and averaged at each standard concentration point. Options: OFF (=1), 2 or 3. This parameter is only available if the calibration mode is set to Standards
		Bradford	29	
		Lowry	32	
		Biuret	35	
Standards	Protein	BCA	26	Enter the number of standard concentration points to be used in the curve. Range 1-9.
		Bradford	29	
		Lowry	32	
		Biuret	35	
Std. n (n=a number)	Protein	BCA	26	Enter the concentration value for each standard. These parameters are only available if the calibration mode is set to Manual
		Bradford	29	
		Lowry	32	
		Biuret	35	
Theme	Utilities	Preferences	40	Define the screen layout of folders. Options are a grid format (the default) or a list

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Parameter	Folder	Sub-Folder	Manual page	Description and options
Units	DNA		11	Select the units to measure the absorbance ratio in. Options: µg/ml, ng/µl or µg/µl
	RNA		13	
	Oligo		15	
	Protein	Protein UV	24	
Units	Absorbance/ Concentration Protein		18	Enter the units using the alphanumeric keys or press <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> and select pre-defined units using the left and right arrows (options: (µg/ml, µg/µl, pmol/µl, mg/dl, mmol/l, µmol/l, g/l, mg/l, µg/l, U/l, %, ppm, ppb, conc or none)
		BCA	26	
		Bradford	29	
		Lowry	32	
		Biuret	35	
Units	Cell Culture		20	Selects either cell count (cells/ml) or OD (optical density)
Volume	DNA		11	Enter the volume of the sample. Range: 0.01 to 9999
	RNA		13	
	Oligo		15	
	Protein	Protein UV	24	
Wavelength	Absorbance/ Concentration		17	Enter the wavelength at which you want to measure absorbance or concentration
Wavelength	Protein	BCA	26	Set at 562 nm
Wavelength	Protein	Biuret	35	Set at 546 nm
Wavelength	Protein	Bradford	29	Set at 595 nm
Wavelength	Protein	Lowry	32	Set at 750 nm
Wavelength	Cell Culture		20	Set at 600nm
Year	Utilities	Date and Time	39	Enter the year