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# GeneQuant™ 1300

## QUICK REFERENCE GUIDE

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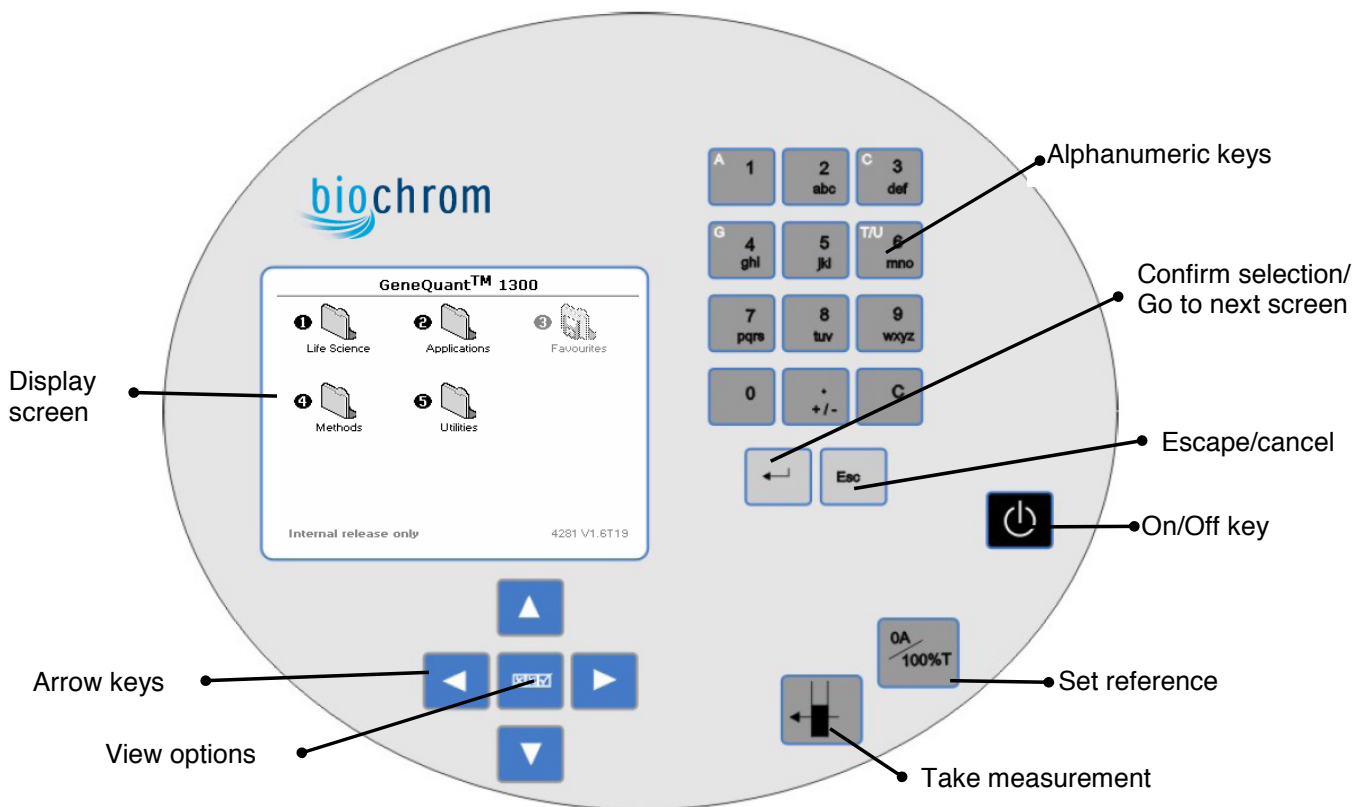
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## The Instrument



### Key

On/off key

### Action

Turns the instrument on/off

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. Some of these are common to all applications and described below. Options unique to an application are described in the relevant section.

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. Leave for 1 second before entering next character. Use C button to backspace and 1 to enter a space.

Escape

Escape from a selection and return to the previous folder.

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.

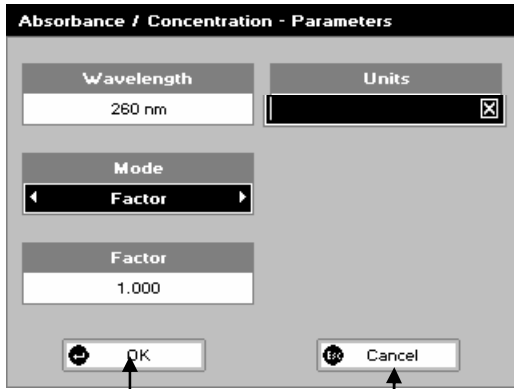
OK/Next: 


Enter, or confirm, a selection.




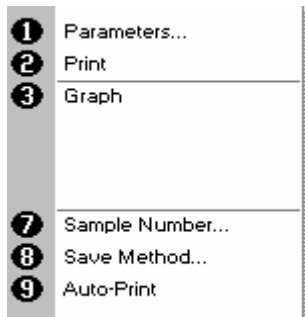
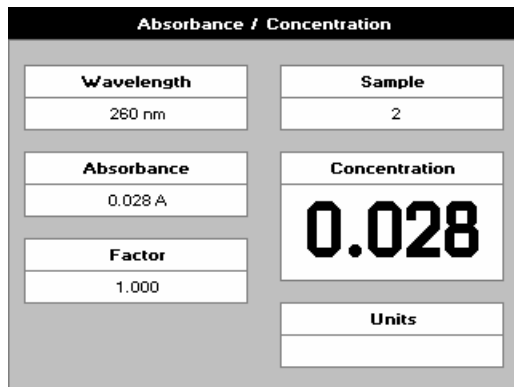
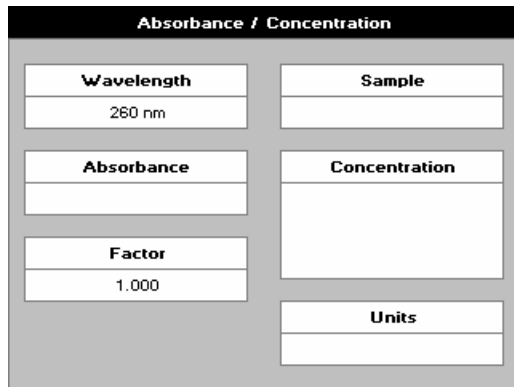
Take a measurement.

## The Display Screen



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







## 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.




## Taking Measurements


1. Insert the reference sample in chamber. Press the blue 0A/100% key.
2. Insert the first sample and press the key with a test tube symbol  on it.

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.

## Parameter Dictionary

Parameter	Folder	Sub-Folder	Manual page	Description and options
A	Life Science	Nucleic Acids - Oligo	17	Enter the proportion of Adenine bases. Default is 10, range: 0 – 9999. Only an option when units are pmol/μl
A260	Life Science	Protein – Protein UV	28	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
A280	Life Science	Protein – Protein UV	28	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
Autodetect peaks	Applications	Wavescan	48	Yes/No – turns on and off the automatic peak detection
Auto-Print	Utilities	Printer	62	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
Auto Standby	Utilities	Preferences	63	Select whether to use a standby mode after defined periods. Options: 1 hour, 2 hours, at night or off
Background	Applications	Absorbance Ratio – Wavelengths	58	Select whether a background correction is applied to both wavelengths
Background	Life Science	Nucleic acids – DNA Nucleic acids – RNA Nucleic acids – Oligo Cy Dye Protein – Protein UV	13 15 17 23 28	Select whether the background correction at 310 nm is used or not. Options: On or Off
Base sequence	Life Science	Tm Calculation	21	Enter the base sequence triplets using the annotated number keys. 1=A, 3=C, 4=G, 6=T/U
Base Type	Life Science	Tm Calculation	21	Select the base type: DNA or RNA
Brightness	Utilities	Contrast	63	Adjust the brightness using the left and right arrows
Buffer molarity	Life Science	Tm Calculation	21	Enter the molarity of the buffer.
C	Life Science	Nucleic Acids - Oligo	17	Enter the proportion of Cytosine bases. Default is 10, range: 0 – 9999. Only an option when units are pmol/μl
Calibration App	Applications Life Science	Standard curve Protein – BCA Protein – Bradford Protein – Lowry Protein – Biuret	53 30 33 36 39	Select the calibration mode. Standard, measure prepared standard or Manual, enter values using key pad numbers
Coefficient	Life science	Cy Dye	23	Use to enter the extinction coefficient of the dye
Contrast	Utilities	Contrast	63	Adjust the contrast using the left and right arrows
Correction	Life Science	OD600	25	Enter the correction factor to compensate for different optical configurations between this and other instruments. Default value is 2
Counter ion	Life Science	Tm Calculation	21	Select the counter ion: Na, K, TEA or Other

Parameter	Folder	Sub-Folder	Manual page	Description and options
Curve Fit	Applications Life Science	Standard curve	53	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
		Protein – BCA	30	
		Protein – Bradford	33	
		Protein – Lowry	36	
		Protein – Biuret	39	
Day	Utilities	Date and Time	62	Enter the day of the month
Delay time	Applications	Kinetics – Parameters 1	50	Enter the delay time in seconds before measurements are taken. Maximum 600 seconds (10 minutes)
Diluent	Applications Life science	Absorbance Ratio – Parameters	58	Enter the volume of the diluent. Range: 0.01 – 9999
		Nucleic Acids – DNA	13	
		Nucleic Acids – RNA	15	
		Nucleic acids – Oligo	17	
		Cy Dye	23	
Dilution Factor	Applications Life science	Absorbance Ratio – Parameters	58	Enter the dilution factor using the keypad numbers or press $\square\square\square$ to calculate the dilution factor
		Nucleic Acids - DNA	13	
		Nucleic Acids – RNA	15	
		Nucleic acids – Oligo	17	
		Cy Dye	23	
DP	Applications Life Science	Concentration	45	Determines the number of decimal places in the results (0-2). Results have a maximum of 5 figures
		Kinetics – parameters 2	50	
		Standard Curve	53	
		Protein – BCA	30	
		Protein – Bradford	33	
Draw peaks	Applications	Protein – Lowry	36	Yes/No – switches display of peak cursors on and off
		Protein – Biuret	39	
		Wavescan, options 4 – peak detection	48	
		Kinetics – Parameters 1	50	
		Duration	Applications	
Dye name	Life science	Cy Dye	23	Enter the name of the dye
End wavelength	Applications	Wavescan	47	Enter the end wavelength for the spectral scan. Range: 200 – 950 nm
Factor	Applications	Concentration	45	Set the factor by which the result is multiplied to give the result within a chosen range. Only available if the mode selected is Factor
Factor	Applications	Absorbance Ratio – Parameters	58	Set the factor by which the result is multiplied to give the result within a chosen range. Range 0.01 – 9999
		Kinetics – Parameters 2	50	
Factor	Life science	Cy Dye	23	Enter the $A_{260}$ conversion factor for the the form of DNA or RNA being used
Factor	Life Science	Nucleic acids – DNA	13	Enter the factor. Default is 50, range: 0.01-9999
Factor	Life Science	Nucleic acids – Oligo	17	Enter the factor. Default is 33, range: 0.01-9999
Factor	Life Science	Nucleic acids – RNA	15	Enter the factor. Default is 40, range: 0.01-9999

Parameter	Folder	Sub-Folder	Manual page	Description and options
Factor	Life Science	OD600	25	Enter the factor. Range 0 – 9999. Only available if units are cells/ml
Folder	Utilities	Folder Names	63	Select a folder to rename. Options: Methods 1-9 or Favourites
G	Life Science	Nucleic Acids - Oligo	17	Enter the proportion of Guanine bases. Default is 10, range: 0 – 9999. Only an option when units are pmol/μl
Game	Utilities	Sudoku - Setup	64	Select the game number. Range 1-50. Only available if 'Computer' (the 50 preset games) is selected as the game mode
Games	Utilities	Preferences	63	Select whether the games function is on or off. Options: yes or no
History	Utilities	Preferences	63	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	62	Enter the hour. Range 1-24
Interval	Applications	Kinetics – Parameters 1	50	Enter the interval time in seconds between measurements: 5, 10, 20, 29 or 60 seconds
Language	Utilities	Regional	62	Select the language used on the display screen. Options: English , French, Italian, Japanese or Spanish
Minimum peak height	Applications	Wavescan, options 4 – peak detection	48	This selects the minimum height above the highest of the two adjacent minima, that a peak must be if it is to be detected
Minimum peak width	Applications	Wavescan, options 4 – peak detection	48	This selects the minimum width, in nm, a peak must be to be detected (width = difference in wavelength between the higher of the two adjacent minima and the opposing intersection of that higher minimum level and the peak profile). Range 1-190 nm, default 5 nm
Minutes	Utilities	Date and Time	62	Enter the minute. Seconds are zeroed when OK is pressed
Mode	Applications	Concentration	45	Select 'Factor' if the factor is known or 'Standard' if it will be calculated from a standard of known concentration
Mode	Applications	Kinetics – Parameters 2	50	Select the measurement mode: Delta A – change in absorbance over the measurement duration; Final A – absorbance at the end of the measurement duration; slope – rate of change of absorbance over the measurement duration
Mode	Applications	Single Wavelength Wavescan	43 47	Select the mode of measurement – Absorbance or % Transmission
Mode	Utilities	Sudoku - Setup	64	Select the mode – Computer, for 50 preset games, or User to enter your own pattern
Month	Utilit	Date and Time	62	Select the month
Multiplier	Life Science	OD600	25	Select the multiplier: 1000 or 1,000,000. Only available if units are cells/ml
New Name	Utilities	Folder Names	63	Enter a new name for the folder
Number Format	Utilities	Regional	62	Set the decimal point style: 999,9 or 999.9
Other MW	Life Science	Tm Calculation	21	Only available if counter ion is 'Other'

Parameter	Folder	Sub-Folder	Manual page	Description and options
Pathlength	Applications	Absorbance Ratio - Parameters	58	Select the relevant path length – 5 or 10 mm
	Life science	Nucleic Acids – DNA	13	
		Nucleic Acids – RNA	15	
		Nucleic acids – Oligo	17	
		Tm Calculation	21	
		Cy Dye	23	
Protein – Protein UV	28			
Peak detect on zoom	Applications	Wavescan, options 4 – peak detection	48	Yes/No – determines whether peaks are reassessed and tabulated when the user zooms into a region of the wavescan or whether these stay as determined on the un-zoomed display
Phosphorylated	Life Science	Tm Calculation	21	Select whether or not the sample is phosphorylated: yes or no
Prime concentration	Life Science	Tm Calculation	21	Enter the concentration of the primer.
Printer	Utilities	Printer	62	Select the printer to send the results to. Options: Built in (internal printer), or to a computer via either USB port or Bluetooth
Replicates	Applications Life Science	Standard curve	53	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
		Protein – BCA	30	
		Protein – Bradford	33	
		Protein – Lowry	36	
		Protein – Biuret	39	
Sort peaks by	Applications	Wavescan, options 4 – peak detection	48	Select how peaks are sorted – by wavelength, peak height or peak width
Standards	Applications Life Science	Standard curve	53	Enter the number of standard concentration points to be used in the curve. Range 1-9.
		Protein – BCA	30	
		Protein – Bradford	33	
		Protein – Lowry	36	
		Protein – Biuret	39	
Start RNA	Life science	Cy Dye	23	The amount of RNA in ng that is being used
Start wavelength	Applications	Wavescan	47	Enter the start wavelength for the spectral scan – range 200 – 950 nm
Std. n (n=a number)	Applications Life Science	Standard curve	54	Enter the concentration value for each standard. These parameters are only available if the calibration mode is set to Manual
		Protein – BCA	30	
		Protein – Bradford	33	
		Protein – Lowry	36	
		Protein – Biuret	39	
T	Life Science	Nucleic Acids - Oligo	17	Enter the proportion of Thymine bases. Default is 10, range: 0 – 9999. Only an option when units are pmol/μl
Theme	Utilities	Preferences	63	Define the screen layout of folders. Options are a grid format (the default) or a list
Units	Applications	Absorbance Ratio – Parameters	58	Select the units to measure the absorbance ration in. Options: μg/ml, ng/μl or μg/μl
	Life Science	Nucleic acids – DNA	13	
		Nucleic acids – RNA	15	
		Nucleic acids – Oligo	17	
		Protein – Protein UV	28	

Parameter	Folder	Sub-Folder	Manual page	Description and options
Units	Applications	Concentration	45	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)
		Kinetics – Parameters 2	50	
	Life Science	Standard Curve	53	
		Protein – BCA	30	
		Protein – Bradford	33	
Protein – Lowry	36			
Protein – Biuret	39			
Units	Life Science	OD600	25	Select the units of measurement: OD or cells/ml
Volume	Applications	Absorbance Ration – Parameters	58	Enter the volume of the sample. Range: 0.01 to 9999
		Life science	DNA	
	RNA		15	
	Oligo		17	
	Cy Dye		23	
Protein – Protein UV	28			
Volume	Life science	Cy Dye	23	Enter the volume of the probe being used in µl
Wavelength	Applications	Concentration	45	Enter the wavelength at which you want to do the colorimetric assay
Wavelength	Applications	Kinetics – Parameters 1	50	Enter the wavelength at which you want to measure absorbance over a period of time
Wavelength	Applications	Single wavelength	43	Enter the wavelength at which you want to measure absorbance or % transmission
Wavelength	Applications	Standard curve	53	Select the wavelength at which you want to construct the calibration curve
Wavelength	Life science	Cy Dye	23	Enter the wavelength of the dye absorption peak
Wavelength	Life Science	OD600	25	Select the wavelength. Default value is 600 nm
Wavelength	Life Science	Protein – BCA	30	Set at 562 nm
Wavelength	Life Science	Protein – Biuret	39	Set at 546 nm
Wavelength	Life Science	Protein – Bradford	33	Set at 595 nm
Wavelength	Life Science	Protein – Lowry	36	Set at 750 nm
Wavelength 1	Applications	Absorbance Ratio – Wavelengths	58	Enter the first wavelength which you want to use to measure the absorbance ratio
Wavelength 2	Applications	Absorbance Ratio – Wavelengths	58	Enter the second wavelength which you want to use to measure the absorbance ratio
Wavelength 3	Applications	Absorbance Ratio – Wavelengths	58	Enter the wavelength from which the background correction will be obtained. This parameter is only available if the background parameter has been set to On
Wavelengths	Applications	Multi Wavelength	57	Select the number of wavelengths at which you want to measure absorbance. Range 2-5
X axis limits	Applications	Wavescan, options 6 - Graph Scale	49	Set to On to define the start and finish points of the x axis, or off to retain default values
X1	Applications	Wavescan, options 6 - Graph Scale	49	Enter the minimum value for the x axis
X2	Applications	Wavescan, options 6 - Graph Scale	49	Enter the maximum value for the x axis



<b>Parameter</b>	<b>Folder</b>	<b>Sub-Folder</b>	<b>Manual page</b>	<b>Description and options</b>
Y axis limits	Applications	Wavescan, options 6 - Graph Scale	49	Set to On to define the start and finish points of the y axis, or off to retain default values
Y1	Applications	Wavescan, options 6 - Graph Scale	49	Enter the minimum value for the y axis
Y2	Applications	Wavescan, options 6 - Graph Scale	49	Enter the maximum value for the y axis
Year	Utilities	Date and Time	62	Enter the year
Zoom mode	Applications	Wavescan, options 6 - Graph Scale	49	Allows you to choose to set the scale of the x and y axis on the wavescan graph. Options: x axis, y axis, x & y axes
$\lambda$ n (n= a number)	Applications	Multi Wavelength	57	Enter each of the wavelengths at which you want to measure absorbance. Range 190 – 1100 nm